

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF
THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 1999

Oglebay Norton Company
(Exact name of Registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

34-0158970

(IRS Employer
Identification No.)

**1100 Superior Avenue — 21st Floor,
Cleveland, Ohio**

(Address of principal executive offices)

44114-2598

(Zip Code)

Registrant's telephone number, including Area Code: (216) 861-3300
Securities registered pursuant to Section 12(g) of the Act:

**Common Stock
\$1 Par Value**

**Rights to Purchase
Preferred Stock**

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months, and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

The aggregate market value of voting stock held by non-affiliates of the Registrant at March 10, 2000 (calculated by excluding the total number of shares reported under Item 12 hereof) was \$77,074,000.

Shares of Common Stock with associated Rights to Purchase Preferred Stock outstanding at March 10, 2000: 4,960,296.

Portions of the following document are incorporated by reference: Schedule 14A Information containing the Registrant's definitive proxy statement, dated March 14, 2000 for the Registrant's 2000 Annual Meeting of Stockholders.

PART I

ITEM 1. BUSINESS

A. (1) About The Company

Oglebay Norton Company, founded in 1854 and headquartered in Cleveland, Ohio, mines, processes, transports and markets industrial minerals and enjoys significant market share in each of its business segments. In March 1999, the Company reorganized into a Delaware holding company. Each business segment consists of one or more subsidiaries. The primary Standard Industrial Code for the Company is 1400. The Company serves a broad customer base primarily in four major categories: Building Products, Energy, Environmental and Industrial. The principal offices of the Company are located at 1100 Superior Avenue, 21st floor, Cleveland, Ohio 44114-2598. The Company benefits from long-term relationships with market-leading customers, many of which have multi-year purchase contracts with the Company. In addition, the Company owns high-quality assets, including (1) strategically located, high-quality limestone, industrial sand and mica reserves, (2) modern mineral extraction equipment and facilities, and (3) a well-maintained fleet of marine transportation vessels.

The Company (1) mines and processes limestone and manufactures lime at eight operations, six of which are located throughout the eastern United States, through its *Lime and Limestone* business segment, (2) mines and processes industrial sands and copper slag at eight operations, located in Ohio and the southwestern United States, through its *Industrial Sands* business segment, and (3) operates a fleet of twelve self-unloading vessels on the Great Lakes, transporting iron ore, coal, limestone and other dry bulk cargo between U.S. ports through its *Marine Services* business segment. In addition, the Company created on December 1, 1999 a Specialty Minerals business unit which mines and processes mica and related minerals at operations in North Carolina and New Mexico. The Company believes that its Lime and Limestone business is one of the six largest producers of lime and one of the largest producers of limestone in the United States; that its Industrial Sands business is the fourth largest producer of industrial sands in the United States; and its Specialty Minerals business is the largest producer of mica in the United States. The Marine Services business segment, which is one of four leading providers of marine transportation between U.S. ports on the Great Lakes, has an approximate 20% share of such market.

During 1999, the Company completed three acquisitions, the largest of which was the purchase of mica assets from Franklin Industries. These assets are the basis upon which the Company created Oglebay Norton Specialty Minerals, Inc., a wholly owned subsidiary. In addition, the Company purchased a lime and limestone quarry and production facility located in Winchester, Virginia from W.S. Frey Company and a copper abrasives business located in El Paso, Texas from Parker Brothers, Inc. Both of these acquisitions were strategic to the growth of the lime and limestone and industrial sands segments, respectively. None of these acquisitions are material to the financial results or financial position of the Company.

In addition to completing three strategic acquisitions, the company completed four divestitures during 1999. The companies and assets sold were non-strategic to the future growth of the company. Global Stone Ingersoll, Ltd. and Global Stone Detroit Lime Company were acquired as part of the 1998 acquisition of Global Stone Company. These facilities did not meet management's expectations for future growth and therefore the operations were sold. The company also divested a stone dock it acquired in its 1998 acquisition of Global Stone Port Inland and the stock of Laxare, Inc. These transactions were completed in the third and fourth quarters of 1999, respectively. The dock was located in Detroit, Michigan and was sold to a customer in that region. Laxare, Inc. was a coal property the Company had owned for more than 25 years. The company is no longer actively involved in the mining and processing of coal.

(2) Business Strategy

The Company's strategy for enhancing its market leadership position and maximizing profitability and cash flow includes the following:

- *Pursue growth through selective acquisitions.* The Company intends to continue to make strategic acquisitions of complementary businesses to:
 - supplement internally generated growth;
 - increase the breadth of product offerings;
 - add customers and expand geographic coverage;
 - take advantage of industry consolidation; and
 - capitalize on the Company's expertise in the industrial minerals industry.

The Company uses strict criteria to evaluate business acquisition possibilities, including existing customer relationships, potential cost reductions and synergies, return on investment parameters and anticipated impact on earnings per share.

- *Capitalize on increasing demand for industrial minerals for building materials.* The company has secured significant regional market share in the building materials market, particularly with respect to construction aggregates and industrial fillers markets. Limestone, industrial sands and mica are used to varying degrees by building materials manufacturers as filler material in paints, joint cements, roofing shingles, carpet backing, and floor and ceiling tiles. In addition, the Company's limestone is used as construction aggregate infrastructure projects such as roads. The Company also packages limestone and sand for sale at the nation's leading home centers and regional lawn care distributors for commercial and home lawn and garden care. With increased presence in the building materials market, the Company also intends to capitalize on its customer relationships by providing better service and a broader selection of minerals for customers to purchase.
- *Capitalize on market opportunities in the energy segment.* The Company's industrial sands segment is well positioned to serve the increased demand for high-purity silica sands used by oil-well service companies in the oil-well fracturing process. In addition, the Marine Services segment has continued to increase its share of coal transported for use by electric utilities in the Great Lakes region.
- *Capitalize on increasing demand for minerals for environmental purposes.* Public concerns over environmental issues, reflected in recent legislative changes in the United States, have resulted in an increase in the demand for lime and limestone used in environmental clean-up applications, including flue gas desulfurization, municipal waste sludge treatment, industrial water treatment, drinking water treatment and hazardous waste remediation. The Clean Air Act, for example, requires the reduction of emissions, particularly sulfur, from certain machinery. Lime is the principal agent used in the desulfurization process. The Company believes that it is well positioned to capitalize on this increasing demand. The Company is also experiencing increased demand for its high-purity silica sands for use in water filtration systems.
- *Capitalize as a consolidator of industrial minerals:* The minerals industry has been consolidating rapidly. The company has actively participated in the consolidation and intends to continue to be a consolidator by capitalizing on opportunities to expand its market presence in specific geographic regions and markets in which consolidation offers economic synergies. These markets include building materials, glass-making, industrial coatings and aggregates.
- *Maximize fleet efficiency.* The Marine Services business segment strives to efficiently control the dispatch and movement of its vessel fleet. This function is performed centrally and is key to maximizing profitability. The segment attempts to negotiate contracts and dispatch vessels to facilitate backhauls, improving efficiency and profitability by providing tonnage on a vessel's return trip, when it would

normally travel without cargo. The business segment also attempts to maximize the fleet's efficiency through careful scheduling and continuous tracking of weather, dock and traffic conditions. In addition, the fleet benefits from an extensive preventive maintenance program. Every vessel is brought into top mechanical condition during the winter and maintained during the shipping season through continuous attention to maintenance needs. Regular inspections and ongoing electronic monitoring of equipment enable mechanics to repair or replace machinery before it fails.

- Continue decentralized management of operating units. The Company's business segments are managed on a decentralized basis by operating managers, while the corporate management team provides strategic direction and support, and helps identify and evaluate potential acquisition opportunities. The Company believes that its decentralized corporate culture eliminates many of the inefficiencies that can result from a highly centralized corporate structure. Operating managers have decision-making authority and are compensated based on the profitability of their respective business segment. The Company also believes that this philosophy results in better customer service by allowing each operating segment the flexibility and autonomy to implement policies and make decisions based on first-hand assessments of individual customer requirements.

B. Principal Products and Services

1. *Lime and Limestone*

The Company's Lime and Limestone business segment is headquartered in Roswell, Georgia. Through a series of transactions in 1999 and 1998, the Company has become a major North American supplier of crushed and ground limestone, construction aggregates, chemical limestone, lawn and garden products and lime serving a broad customer base in a variety of industries. Company products are used primarily as filler in building materials, as aggregate for construction of schools, hospitals, shopping centers and highways, as an environmental cleaning agent for flue gas desulfurization, waste water treatment and soil stabilization and as a chemical in steel-making, paper-making and glass-making.

Industry

Limestone accounts for about three-quarters of crushed stone production in the United States. Crushed limestone has four primary end uses: construction aggregates and building materials; chemical and metallurgical processes; cement and lime manufacturing; and agricultural purposes.

High-purity chemical limestone may be processed into value-added products, such as lime or limestone fillers, or sold as chemical limestone for use in manufacturing products as diverse as poultry feed mixtures, fiberglass, and roofing shingles. Fillers, which are finely ground limestone powders, are used in a wide range of manufacturing processes including vinyl flooring, carpet backing, adhesives, sealants and jointing compounds for wallboard.

Lime is a value-added product, derived from limestone, and is widely used in a variety of manufacturing processes and industries, including iron and steel, pulp and paper, chemical, air purification, sewage, water and waste treatments, agricultural and construction. The wide range of end-uses and markets for lime offers some protection from the economic cycles experienced by individual sectors such as the steel industry. In addition, a high proportion of lime is sold into end-uses that have year-round requirements largely unaffected by the weather.

Operations

The Company's Lime and Limestone business segment produces products for all four primary end uses described above. The segment has eight lime and/or limestone operations in North America that collectively

extract and process high purity limestone. These operations are located in Tennessee, Virginia (3 operations), Michigan, Pennsylvania, Oklahoma and Georgia.

The segment currently operates nine open pit quarries and four underground mines. At the quarry operations, limestone is extracted from the ground by traditional drilling and blasting techniques. In an open pit quarrying operation, the high purity limestone is often covered by an overburden of construction grade limestone that must first be removed. This overburden is used whenever possible to produce construction aggregates, usually in a dedicated crushing plant, in order to minimize the net costs of extraction. Following extraction, trucks or trains are used to deliver the “as-blasted” limestone to a primary crusher. It is then processed through several stages of crushing and screening to form products that are saleable as chemical limestone or ready for further processing into aggregates, lime, fillers and other value-added products. The Company assesses mineral reserves at all of its quarries and mines utilizing external consulting geologists and mining engineers.

High-purity chemical limestone is processed into lime by heating it in a kiln. At December 31, 1999, the Company believes its daily lime production capacity is approximately 4,500 tons. The capacity over a 24-hour period cannot be projected over a full calendar year because kilns require regular planned outages for maintenance and equipment is subject to unplanned outages customary with any mechanical plant. Typically, a kiln will operate between 80% and 90% of the available hours in any year.

Customers

Transportation cost represents a significant portion of the overall cost of lime and limestone. As a result, the majority of lime and limestone production is sold within a 200-mile radius of the producing facility. The Company believes that its lime and/or limestone operations are strategically located near major markets. The segment’s customers vary by the type of limestone products they demand: lime, chemical limestone or construction aggregate.

In general, demand for lime and limestone correlates to general economic cycles, principally new construction demand, population growth rates and government spending on road construction, which affect the demand for our customers’ products and services. The segment has a broad customer base covering all sectors of the demand for lime and limestone. The Company estimates that the building materials and construction, industrial and chemical and environmental markets account for approximately 55%, 29% and 16%, respectively, of the business segment’s revenue.

Competition

Given that transportation cost represents a significant portion of the overall cost of lime and limestone products, competition generally occurs among participants in close geographic proximity. In addition, the scarcity of high purity limestone deposits on which the required zoning, extraction and emission permits can be obtained serves to limit competition from start-up operations within the lime and limestone market.

Lime is primarily purchased under annual contracts. For many customers, the cost of lime is quite small in comparison to their overall production costs. For 1999, the Company estimates that the five largest lime producers in North America accounted for approximately 72% of total industry capacity, with the Company’s business segment accounting for approximately 6%. The four largest companies with which the Company competes are privately owned.

The building materials and construction aggregate industry in North America is highly fragmented. Many of the active operations are small scale or wayside locations operated by state or local governments, usually to meet the requirements of highway contracts in more remote locations. There are many companies whose positions are substantial and often centered on a particular geographic region, including Vulcan Materials Corporation, Martin Marietta Materials Inc. and Lafarge Corporation.

2. Industrial Sands

The Company's Industrial Sands segment, headquartered in Phoenix, Arizona, is engaged in the mining and processing of industrial sands for the oil drilling, construction, glass-making, filtration, landscaping and ceramic and fiberglass industries and the processing of coated sands and silica-free abrasives.

Industry

Industrial sands, often termed "silica", "silica sand" and "quartz sand", include high silicon dioxide content sands. While deposits of more common construction sand and gravel are widespread, industrial sand deposits are limited. The special properties of industrial sand—purity, grain size, color, inertness, hardness and resistance to high temperatures—make it often irreplaceable in a variety of industrial applications. Higher silica content allows for more specialized, high margin applications than construction sand and gravel, such as glass, ceramics, fiberglass, foundry, abrasive, hydraulic fracturing (oil and gas drilling), and a variety of other high margin applications.

The demand for industrial sands is driven by a number of factors depending on end use. For example, silica flour, which is used in the production of fiberglass, paint and ceramics, is used primarily in new construction, making demand for silica flour highly correlated with housing starts in the geographic markets served. Demand for frac sands, used by oil drilling services companies, is correlated with the price per barrel of oil. In specialized applications, the physical properties of sand, such as strength, color, shape and texture can also be important.

Operations

The Industrial Sands business segment products include: (i) fracturing sands, which are used by oil drillers to hold rock structures open; (ii) whole grain sands and silica flour, which is used in glass-making; (iii) filtration sands, which are used in liquid filtration systems; (iv) recreational sands, which are used in the construction of golf courses and other recreation fields as well as in general landscaping applications; (v) specialty construction/industrial sands, which are used in the construction industry; (vi) coated sand and silica-free copper abrasives for industry; and (vii) silica flour, which is used in the manufacture of building materials, fiberglass and ceramics.

The Industrial Sands segment has eight operations located in Ohio and the southwestern United States. The business segment currently operates four open pit quarries with integrated processing plants, one processing plant supported by surface sand purchased under a long-term contract, one processing plant supported by copper slag purchased under a long-term contract and two remote processing plants. Once extracted, the sand is washed to remove impurities like clay and dirt. The sand is then dried, screened and separated into different sized granules. At certain of the facilities, the sand is also pulverized into powder for use in ceramic and other applications. All of the segment's industrial sands operations have railroad and/or highway access.

Customers

The segment has a broad customer base covering all sectors of demand for industrial sands. Similar to lime and limestone, transportation cost represents a significant portion of the overall cost of industrial sands, and the majority of production is sold within a 200-mile radius of the producing facility. However, for the higher-margin industrial sands materials, representing sands with particular qualities, competition occurs among sand producers in different geographic regions since transportation costs are less restrictive. Customers of the Industrial Sands segment participate in the oil well service, specialty construction, glass, fiberglass, ceramic, recreational, foundry and filtration industries. Within these industries, sand is used for a wide variety of applications, from fracturing sands used to increase oil well production to sands used in the manufacture of roofing shingles, stucco and other building materials to sands used in playground and golf course construction. Demand for industrial sands used for oil well fracturing was down during the first nine months of 1999, but increased significantly during the fourth

quarter, due in part to increased activity in the domestic oil and gas industry. Demand for industrial sands has been strong in recent years, including 1999, due primarily to construction activity in the southwest. In general, demand for industrial sands correlates to general economic cycles, including the price of oil, new construction demands and population growth rates, which affect the demand for our customers' products and services. The Company estimates that the building materials and construction markets, oil field/frac and other industrial uses accounted for approximately 30%, 24% and 38%, respectively, of the business segment's revenue.

Competition

As stated above, since transportation cost represents a significant portion of the overall cost of industrial sands, competition generally occurs among participants in close geographic proximity. Furthermore, the scarcity of high-purity sand deposits on which the required zoning and extraction permits can be obtained serves to limit competition. Management estimates that the Industrial Sands segment accounts for approximately 11% of the U.S. industrial sands market, making it the fourth largest industrial sand producer in the United States. Its principal competition comes primarily from three companies, including Unimin Corp., U.S. Silica Co., a wholly-owned subsidiary of Better Minerals, Inc. and Fairmount Minerals Ltd.

3. Marine Services

The Company's Marine Services business segment is headquartered in Cleveland, Ohio and operates the largest fleet of self-unloading vessels on the Great Lakes in terms of number of vessels and the third largest such fleet in terms of cargo capacity. The fleet primarily serves the integrated steel, electric utility and construction industries through the transportation of iron ore, coal, limestone and other dry bulk commodities.

Industry

Great Lakes shipping demand is generally related to the state of the economy and to the overall level of manufacturing activity. Moreover, the Great Lakes marine transportation business is seasonal. The season is affected by weather conditions (such as the waterways freezing over), the closing/opening of the locks between the lakes, water levels of the lakes and rivers and customer demand for service. These factors cause the actual number of days of operation to vary each year. Annually, the locks close around January 15 and re-open around March 25. Management believes that the Great Lakes shipping market in which its fleet competes operated at a utilization rate approaching full capacity for the last three years.

Operations

The Marine Services fleet focuses primarily on the bulk transportation of iron ore, coal and limestone for approximately 30 customers. Substantially all the fleet's transportation services are conducted between U.S. ports on the Great Lakes, including Cleveland, Detroit, Milwaukee, Toledo and Duluth. The largest vessels in the fleet, the 1,000-foot M/V Columbia Star and M/V Oglebay Norton, transport primarily iron ore and coal. Management believes that these 1,000-foot vessels, of which there are 13 operating on the Great Lakes, are the most efficient and desirable method of transporting these commodities. The smaller vessels also transport limestone in addition to iron ore and coal and are subject to more flexible scheduling. Generally, the transportation of iron ore represents the highest revenue per ton, but it also often involves the longest routes. Many factors contribute to the overall profitability of a particular vessel and commodity. Delays, including those caused by weather, dock congestion and lake and river traffic also effect profitability. The key to maximizing profitability is effective control of the dispatch and movement of the vessels in the fleet. Through continuous monitoring of fleet sailing patterns and weather, dock and traffic conditions, delays can be minimized, increasing the fleet's profitability.

In addition to the Marine Services fleet, the segment operates a bulk material dock facility in Cleveland, Ohio. The dock facility is operated under a ten-year agreement with the Cleveland-Cuyahoga County Port Authority expiring in March 2007 (with an option to extend for an additional ten years). The dock facility receives cargo from Great Lakes vessels, stores cargo as needed and transfers cargo for further shipment via rail

or water transportation. While the Cleveland dock facility handled only iron ore cargoes during 1999, it can also be utilized for the transshipment of in-bound and out-bound cargoes of other dry-bulk commodities such as coal, sand, limestone, magnetic concentrate ore, salt, cement and coke. The dock operates throughout the year, although the winter months are dedicated primarily to loading stored material on trains rather than unloading from vessels.

Customers

The segment has long-established relationships with many of its customers and provides services to many of them pursuant to long-term contracts. Management estimates that approximately 80% of the tonnage hauled by the vessel fleet was shipped pursuant to multi-year contracts. To a certain extent, demand for marine transportation services correlates to general economic cycles, including steel production, and construction activity in the Great Lakes region. The segment's customers include integrated steel manufacturers (which use our services to transport iron ore, coal and limestone), electric utility companies (which use our services to transport coal) and chemical limestone and construction aggregate producers and purchasers (which use our services to transport limestone). The segment has three principal iron ore customers including The LTV Corporation and AK Steel Holding Corporation, eight principal coal customers including Detroit Edison Company, and approximately 15 limestone customers. The Company estimates that integrated steel customers account for approximately 50% of the segment's revenues.

Competition

The most important competitive factors impacting the Marine Services segment are price, customer relationships and customer service. Management believes that customers are generally willing to continue to use the same carrier assuming such carrier provides satisfactory service with competitive pricing. The vessel fleet competes only among U.S. flag Great Lakes vessels because of the U.S. federal law known as the Jones Act. The Jones Act requires that cargo moving between U.S. ports be carried in a vessel that was built in the United States, has a U.S. crew, and is owned (at least 75%) by U.S. citizens or corporations. As a result, Canadian-flag Great Lakes vessels or foreign-flag oceanic vessels do not carry dry bulk cargo between U.S. ports. Moreover, the size limitation imposed by the St. Lawrence Seaway prevents large oceanic vessels from entering the Great Lakes. The competitive landscape has remained relatively stable over the last ten years with the overall number of vessels available for service decreasing from 75 to 69. The fleet principally competes against three other similar-sized U.S. flag Great Lakes commercial fleets, American Steamship Company, The Interlake Steamship Company and U.S.S. Great Lakes Fleet, Inc. It also competes with certain companies that operate smaller captive fleets and, to a lesser extent, with rail and truck transportation companies serving the Great Lakes region.

4. Other Businesses

On December 1, 1999, the company acquired mica mining and processing assets from Franklin Industries, Inc., creating the basis for a new subsidiary, Oglebay Norton Specialty Minerals, Inc., an Ohio corporation. Oglebay Norton Specialty Minerals, Inc. mines and processes mica for use primarily in the building materials industry as well as in certain other industrial applications. The company mines and processes mica from two facilities, located in North Carolina and New Mexico. The company maintains its headquarters in Cleveland, Ohio.

Mica is used as functional filler in building materials for its unique physical characteristics, including color, flexibility, durability, thermal properties and weight. It is used in the manufacture of numerous industrial and consumer products such as joint compound, paints, automotive sound deadening materials, thermoplastics, coatings and even cosmetics.

Competition is international. Unlike limestone and sand, transporting mica long distances is not economically prohibitive because of its high unit value. Competition is primarily from privately-held international businesses with the only public competitors being Zemex, Inc., and Engelhard Corporation.

C. Environmental, Health and Safety Considerations

The Company is subject to various environmental laws and regulations imposed by federal, state and local governments. In 1999, the Company commenced an Environmental, Health and Safety Initiative for continuous improvement in the Company's performance in this area. Although the Company cannot reasonably estimate future costs related to compliance with these laws and regulations, costs incurred to comply with environmental regulations historically have not been outside the ordinary course of business. It is possible that the Company's future operating results could be affected by future costs of environmental compliance, however, management believes that such costs will not have a material adverse effect on the Company's consolidated financial position. The Company is unable to predict the effects of future environmental laws and regulations upon its business.

D. Employees

At December 31, 1999, the Company employed approximately 1,720 people, of whom 200 are management. About one-half of the Company's employees are unionized, and the Company is party to nine collective bargaining agreements with various labor unions. The Company believes that it maintains good relations with each of these unions. During 1999, the collective bargaining agreements covering employees at the Ingersoll, Ontario operation and the unlicensed crew of the Marine Services vessel fleet expired. Both agreements were successfully renegotiated. The Company no longer owns the Ingersoll operation. In 2000, collective bargaining agreements covering employees at our Tennessee, New Mexico and Ohio operations and the licensed crew of the Marine Services vessel fleet will be negotiated commencing in the second quarter of 2000.

ITEM 2. PROPERTIES

The Company's principal operating properties are described below. The Company's executive offices are located at 1100 Superior Avenue, Cleveland, Ohio, under a sublease expiring on March 31, 2003. The total area involved is approximately 55,000 square feet.

<u>Location</u>	<u>Use</u>	<u>Owned/ Leased</u>	<u>Reserves(1) (years remaining)</u>
Corporate Headquarters			
Cleveland, Ohio	Offices	Leased	N/A
Marine Services			
Cleveland, Ohio	Marine transportation	Leased	N/A
	Bulk commodity dock		
Cleveland, Ohio	Offices	Leased	N/A
Industrial Sands			
California Operations:			
Orange County, California... (San Juan Capistrano)	Sand quarry and processing plant	(2)	13
Riverside, California	Sand processing plant	Owned	Supplied by third parties
Bakersfield, California	Sand processing plant	(3)	Supplied by Voca facility
Ohio Operations:			
Glenford and Howard	Sand quarries and processing plants	Owned	16 and 24, respectively
Texas Operations:			
Brady and Voca.....	Sand quarries and processing plants	Owned	70
El Paso, Texas	Copper slag processing plant		N/A
Colorado Springs, Colorado.....	Sand processing plant	(4)	5
Lime and Limestone			
Luttrell, Tennessee	Limestone mine and lime works	(5)	16
Chemstone operations:			
Strasburg, Middletown, And Winchester, Virginia	Limestone quarries, processing plants and lime works	(6)	More than 100, collectively
York, Pennsylvania	Limestone quarries and processing plants	Owned	31
Marble City, Oklahoma	Limestone mine and lime works	Owned	60
Buchanan, Virginia	Limestone quarries and processing plants	Owned	44
Gulliver, Michigan	Limestone quarries, ship loading facility and processing plant	Owned/Leased	43
Filler Products Operations:			
Chatsworth, Ellijay and Cisco, Georgia.....	Limestone mines and processing plants	(7)	49
Other Businesses			
Kings Mountain, North Carolina			
	Mica mines and processing plant	Leased	21
Velarde, New Mexico	Mica mines and processing plant	Owned	50

- (1) Certain estimates of reserves are based on the life of a mineral reserve and not the actual reserves remaining at the location.
- (2) The processing plant is owned and the sand quarry is subject to a mineral lease agreement through 2013.
- (3) The sand processing plants are owned, however, they are located on land, which is leased through December 31, 2000 with a right to renew for an additional 5-year term.
- (4) The processing plant is owned and the operation acquires feedstock under supply agreements that provide six years of reserves at current production levels.
- (5) The lime works is owned and the limestone mine is subject to a mineral lease agreement through 2015.
- (6) The limestone quarry and lime works at Strasburg and Winchester and the processing plant at Middletown are owned. The limestone quarry at Middletown is subject to a 100-year mineral lease agreement, however, it is estimated that there are 45 years of reserves remaining on the property.
- (7) The processing plants are owned and the limestone mines are subject to a 99-year mineral lease agreement, however, it is estimated that there are 50 years of reserves remaining on the properties.

ITEM 3. LEGAL PROCEEDINGS

The Company and certain of its subsidiaries are involved in various claims and routine litigation incidental to their businesses, including claims relating to the exposure of persons to asbestos and silica. The full impact of these claims and proceedings in the aggregate continues to be unknown. The Company believes that these claims and proceedings are covered by insurance and are unlikely to have a material adverse effect on the Company's financial position.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

No matter was submitted to a vote of the Company's security holders, through the solicitation of proxies or otherwise, during the fourth quarter of the fiscal year covered by this report.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON STOCK AND RELATED STOCKHOLDER MATTERS

The Company's common stock is traded on the NASDAQ National Market (NASDAQ/NMS Symbol: OGLE). The Company had 422 and 413 stockholders of record at December 31, 1999 and 1998, respectively. During the first quarter of 1999, the Company issued 50,000 unregistered shares of common stock as part of the consideration for the Global Stone Winchester acquisition. The following is a summary of the market range and dividends for each quarterly period in 1999 and 1998 for the Company's common stock.

Quarterly Period	Market Range		Dividends
	High	Low	
1999			
4th	\$25.00	\$17.63	\$0.20
3rd	23.75	19.56	0.20
2nd	24.88	20.88	0.20
1st	27.75	17.94	0.20
1998			
4th	\$27.75	\$22.38	\$0.20
3rd	41.00	26.50	0.20
2nd	50.50	39.50	0.20
1st	41.25	36.00	0.20

ITEM 6. SELECTED FINANCIAL DATA**OGLEBAY NORTON COMPANY AND SUBSIDIARIES****(Dollars and shares in thousands, except per share amount)**

	Year Ended December 31				
	1999	1998	1997	1996	1995
OPERATIONS					
Net sales and operating revenues	\$293,902	\$238,852	\$145,185	\$129,697	\$126,373
Operating income	46,544	37,035	24,465	11,653	12,973
Income from continuing operations.....	13,646	12,036	18,356	11,039	10,624
Discontinued operations.....	-0-	-0-	(2,104)	4,518	4,737
Net income	13,646	12,036	16,252	15,557	15,361
PER SHARE DATA					
Income (loss) per common share—basic:					
Continuing operations	\$ 2.81	\$ 2.52	\$ 3.84	\$ 2.26	\$ 2.15
Discontinued operations.....	-0-	-0-	(0.44)	0.93	0.95
Net income	2.81	2.52	3.40	3.19	3.10
Income (loss) per common share—assuming dilution:					
Continuing operations	2.80	2.51	3.81	2.26	2.15
Discontinued operations.....	-0-	-0-	(0.44)	0.92	0.95
Net income	2.80	2.51	3.37	3.18	3.10
Dividends	0.80	0.80	0.75	0.65	0.60
Market price at December 31	23.75	24.75	41.00	21.88	18.63
Book value at December 31	28.62	26.64	24.77	22.01	19.52
Shares of common stock outstanding	4,927	4,765	4,752	4,835	4,932
Average shares of common stock—basic	4,857	4,772	4,785	4,876	4,948
Average shares of common stock—assuming dilution	4,870	4,786	4,816	4,891	4,948
FINANCIAL CONDITION					
Capital expenditures.....	\$ 25,939	\$ 19,119	\$ 24,554	\$ 5,573	\$ 5,968
Working capital.....	38,731	27,311	37,955	28,561	24,780
Total assets.....	568,099	565,624	263,224	234,696	247,220
Capitalization:					
Long-term debt.....	301,706	312,066	47,533	37,141	52,117
Stockholders' equity	141,009	126,933	117,716	106,449	96,265

Results for 1999 include Specialty Minerals and Global Stone Winchester from their respective dates of acquisition. Results in 1998 include Global Stone, Port Inland and Colorado Silica from their respective dates of acquisition. Discontinued operations include the Company's Engineered Materials business segment discontinued in 1997 and Iron Ore business segment discontinued in 1996.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Management's Discussion and Analysis of Financial Condition and Results of Operations may contain statements concerning certain trends and other forward-looking information, within the meaning of certain safe harbor provisions of the federal securities laws. Such forward-looking statements are subject to uncertainties and factors relating to the Company's operations and business environment, all of which are difficult to predict and many of which are beyond the control of the Company. The Company believes that the following factors, among others, could affect its future performance and cause actual results to differ materially from those expressed or implied by forward-looking statements made by or on behalf of the Company: (1) unfavorable weather

conditions; (2) fluctuations in oil prices; (3) a decline in steel production; (4) changes in the demand for the Company's products or services due to changes in technology; (5) Great Lakes, Mid-Atlantic and California construction activity; (6) successful negotiations of labor agreements; (7) the loss or bankruptcy of major customers and (8) changes in environmental laws. The Company did not have any year 2000 failures with its information system hardware or software. Expenditures incurred by the Company during its year 2000 remediation efforts were not material. The Company also did not experience any material year 2000 software conversion failures of vendors, suppliers or customers. Fluctuations in oil prices have both a positive and negative impact on the Company. High oil prices generally result in more drilling activity, positively impacting our Industrial Sands business segment, while at the same time increasing the Marine Services fleet's operating costs. The Company does not anticipate a significant increase in drilling activity during 2000.

Financial Condition

In December of 1999 the Company acquired the assets of Franklin Industries' mica business (subsequently renamed Oglebay Norton Specialty Minerals Inc. ("Specialty Minerals")) for a purchase price of \$32,000,000. Specialty Minerals is grouped with Corporate and Other. Also in 1999 the Company acquired the assets of the W.S. Frey Company ("Global Stone Winchester") for \$12,008,000 in cash and 50,000 restricted shares of the Company's common stock, issued from treasury, having a guaranteed value of \$1,500,000. Consideration for the acquisition also included non-compete and royalty payments of \$3,500,000 of which \$510,000 was paid at the acquisition date and the balance was deferred. Global Stone Winchester is part of the Lime and Limestone segment. The above acquisitions were accounted for as business combinations applying the purchase method of accounting. Assuming the above acquisitions had taken place at the beginning of 1998, proforma results for 1999 and 1998 would not be materially different from the Company's actual results. The purchase price allocations for Specialty Minerals will be finalized in 2000 after the asset and liability valuations are completed.

During 1999, the Company sold in separate transactions the stock of its (i) Global Stone Detroit Lime Company ("Detroit Lime") and (ii) Global Stone Ingersoll Ltd. ("Ingersoll") subsidiaries to affiliates of Carfin S. A., a Belgian corporation and member of the Carmuese Group. The sale of Detroit Lime netted proceeds of \$15,250,000 in August 1999, while net proceeds of \$45,700,000 were received on the sale of Ingersoll in September 1999. The combined net proceeds of \$60,950,000 were used to reduce amounts outstanding on the Company's Senior Credit Facility. In finalizing the purchase price allocation for the Global Stone acquisition, the underlying assets and liabilities of Detroit Lime and Ingersoll were adjusted to fair market value based upon an agreement entered into during the second quarter of 1999 to sell these entities. The re-allocation of the Global Stone purchase price resulted in a \$23,300,000 reduction in goodwill.

In December of 1999, the Company announced that it had reached an agreement to acquire Michigan Limestone Operations Limited Partnership ("Michigan Limestone") and the Company is in the process of arranging financing for this acquisition. The transaction is expected to close during the second quarter of 2000.

During 1998, the Company acquired the assets and liabilities of Global Stone Inc. ("Global Stone") and Colorado Silica Sand, Inc. ("Colorado Silica") and the assets of the Port Inland, Michigan operations of Minerals Technologies, Inc. (subsequently renamed Global Stone Port Inland ("Port Inland")) and Filler Products, Inc. (subsequently renamed Global Stone Filler Products ("Filler Products")). The operating results of Global Stone, Port Inland and Filler Products formed the Company's Lime and Limestone segment, while the operating results of Colorado Silica are included within the Industrial Sands segment. These acquisitions (collectively referred to as the "1998 Acquisitions") were accounted for as business combinations applying the purchase method of accounting. The combined purchase prices of these acquisitions, including assumed debt, totaled \$294,194,000.

During 1997, the Company's Industrial Sands segment acquired certain assets of a sand screening plant in California and a supplier of blending sand and organic mixes in Ohio. The combined purchase prices of these assets totaled \$3,400,000.

The Company's operating activities provided cash of \$22,496,000 in 1999 which was a decrease of 14%, or \$3,653,000, compared with \$26,149,000 for 1998. Cash from operations during 1999 decreased \$1,194,000, or 5%, when compared with \$23,690,000 for 1997. The Company's net income was \$13,646,000 in 1999 compared with \$12,036,000 and \$16,252,000 in 1998 and 1997, respectively. The decrease in operating cash primarily results from increased interest expense paid. Interest payments in 1999 totaled \$27,465,000 compared with \$13,593,000 in 1998 and \$2,353,000 in 1997. Also, reducing cash from operations is the increase in accounts receivable and inventories at December 31, 1999. Some of the increase is attributable to having larger revenues from Marine Services in December 1999 compared with 1998 due to a longer sailing season. The increase is also the result of an increase in sales from a few large oil service industry customers accounting for a greater percentage of 1999 fourth quarter sales compared with 1998. The increase in accounts receivable from 1999 compared with 1997 is primarily the result of the 1998 Acquisitions. These reductions to cash from operations were partially offset by increases in non-cash charges for depreciation, depletion and amortization of \$27,150,000 for 1999 compared with \$20,875,000 for 1998 and \$8,947,000 for 1997 as a result of the timing of the 1998 Acquisitions. Operating results of the Company's business segments are discussed in more detail under "RESULTS OF OPERATIONS".

Expenditures for property and equipment, including vessel inspection costs, amounted to \$25,939,000 in 1999 compared with \$19,119,000 and \$24,554,000 in 1998 and 1997, respectively. During 1999, the Company's Lime and Limestone segment had a full year of capital expenditures for various expansion projects totaling \$17,087,000 compared with \$8,322,000 in 1998 for the portion of the year following the formation of the Lime and Limestone segment. In 1999, the Company's Industrial Sands segment expended \$4,501,000, including almost \$1,000,000 on a quarry relocation project at the Brady, Texas operation. The Marine Services segment expended \$4,113,000 in 1999 primarily related to vessel automation and equipment improvements as well as vessel inspection costs. In 1998, the Company's Industrial Sands segment expended \$6,069,000, primarily on plant expansion projects at the Brady, Texas and Orange County, California operations. The Marine Services segment expended \$4,703,000 in 1998 related to vessel inspection costs and various equipment improvements. In 1997, the Company's Industrial Sands segment expended \$4,108,000 and the Marine Services segment expended \$3,234,000. Expenditures in 1997 also include \$17,000,000 for the acquisition of two self-unloading vessels that the Company had been operating under long-term leases. Expenditures for property and equipment for 2000, excluding business acquisitions, are currently expected to approximate \$30,000,000. Of this amount, \$16,400,000 would be classified as spending on expansion projects.

In December 1997, the Company recognized a net loss of \$1,262,000 on the disposal of its Engineered Materials assets. During 1998, the Company completed the sale of these assets and received installment payments totaling \$9,082,000. Discontinued operations are described in Note C to the consolidated financial statements.

During May 1998, the Company negotiated a \$215,000,000 Senior Credit Facility with a group of banks in order to finance a portion of the acquisition of Global Stone, refinance existing debt and for general purposes. In March 1999, the Company's Senior Credit Facility was increased to \$232,000,000 to finance the acquisition of Global Stone Winchester. The variable interest rate on the Senior Credit Facility approximated 8.2% at December 31, 1999. The Company's Senior Subordinated Notes, used to finance the Global Stone acquisition, mature in February 2009 and have a fixed interest rate of 10%.

The Company generated free cash flow during 1999 which enabled it to reduce net borrowings by \$12,127,000 on the Senior Credit Facility. The 1998 Acquisitions increased net borrowings by \$208,021,000 in 1998. In addition with the acquisition of Global Stone, the Company assumed additional debt and various capital leases totaling \$43,100,000 and \$10,900,000, respectively, as of the acquisition date. In 1997, the Company's net borrowings increased by \$8,524,000 representing financing a \$17,000,000 acquisition of two Marine Services vessels under a ten-year term loan with a bank partially offset by regular debt payments. As a result of the financing associated with the Global Stone acquisition, this term loan was amended from a fixed interest rate of 7.32% to a semi-variable interest rate not to exceed 8.32%. The interest rate at December 31, 1999 was 8.1%.

The Company's Senior Credit Facility requires interest rate protection on fifty-percent of the Company's senior secured debt. The Company entered into separate interest rate swap agreements with banks to substitute fixed interest rates for LIBOR-based interest rates on notional amounts totaling \$90,000,000 at December 31, 1999. The effect of these agreements, which expire in 2000 and 2001, was to cap the Company's interest rate at 7.48% on \$90,000,000 of the Senior Credit Facility. As a result of the swap agreements, interest expense increased by \$154,000 in 1999 and \$55,000 in 1998. No such swap agreements were in place during 1997.

The following tables provides information about the Company's derivative and other financial instruments that are sensitive to changes in interest rates, which include interest rate swaps and debt obligations. For debt obligations, the table presents cash flows and related weighted average interest by expected maturity dates. For interest rate swaps, the table presents notional amounts and weighted average LIBOR interest rates by contractual maturity dates. Notional amounts are used to calculate the contractual payments to be exchanged under the contract. Weighted average variable rates are based on implied forward LIBOR rates in the yield curve, plus a 2.0% margin for variable rate long-term debt in 1999 and 2.5% margin in 1998. The Company does not hold or issue financial instruments for trading purposes.

December 31, 1999								
	2000	2001	2002	2003	2004	Thereafter	Total	Fair Value
	(In thousands)							
Liabilities:								
Long-term debt:								
Fixed rate	\$4,791	\$ 2,534	\$ 1,269	\$1,954	\$2,016	\$112,962	\$125,526	\$117,822
Average interest rate.....	9.65%	9.70%	9.70%	9.70%	9.76%	9.79%		
Variable rate.....	200	175,980					176,180	176,180
Average interest rate.....	7.60%	7.97%						
Interest rate derivatives:								
Interest rate swaps:								
Variable to fixed	50,000	40,000					90,000	(889)
Average LIBOR pay rate.....	5.44%	5.65%						
Average LIBOR receive rate.....	6.47%	7.13%						

December 31, 1998								
	1999	2000	2001	2002	2003	Thereafter	Total	Fair Value
	(In thousands)							
Liabilities:								
Long-term debt:								
Fixed rate	\$9,306	\$ 5,176	\$ 2,570	\$ 513	\$1,602	\$114,050	\$133,216	\$128,775
Average interest rate.....	9.74%	9.71%	9.70%	9.70%	9.73%	9.76%		
Variable rate.....	200	200	178,450				178,850	178,850
Average interest rate.....	7.60%	7.92%	8.15%					
Interest rate derivatives:								
Interest rate swaps:								
Variable to fixed		50,000	40,000				90,000	903
Average LIBOR pay rate.....	5.48%	5.44%	5.65%					
Average LIBOR receive rate.....	5.10%	5.47%	5.65%					

In 1999, the Company sold a dock in Detroit, Michigan for cash of \$1,985,000, which resulted in a pretax gain of \$1,642,000 (net gain of \$1,067,000 or \$0.22 per share, assuming dilution). The Company also sold an inactive coal property and received cash of \$1,520,000, which resulted in a pre-tax and net gain of \$1,835,000 (or \$0.37 per share, assuming dilution). In 1998, the Company disposed of certain assets resulting in net proceeds of \$875,000 and a pretax gain of \$125,000 (net gain of \$81,000 or \$0.02 per share, assuming dilution). In 1997 proceeds from the disposition of assets totaled \$8,192,000, primarily from the sale of certain coal reserves and recognized pretax gains of \$5,548,000 (net gain of \$3,606,000 or \$0.75 per share, assuming dilution).

The Company declared dividends of \$0.80 per share during 1999 and 1998 compared with \$0.75 per share in 1997. Dividends paid were \$3,881,000 for 1999 compared with \$3,813,000 and \$3,584,000 in 1998 and 1997, respectively. In 1999 the Company purchased from its Incentive Savings Plan, and placed in treasury, 13,723 shares of its Common Stock for \$319,000. The Company purchased on the open market, and placed in treasury, 16,046 shares for \$600,000 during 1998 and 87,990 shares for \$1,970,000 during 1997.

At the end of 1999, the Company re-evaluated assumptions used in determining postretirement pension and health care benefits. The weighted-average discount rates were adjusted from 7.0% to 8.0% to better reflect market rates. The increase in the discount rate reduced the Company pension plans' projected benefit obligation by \$6,645,000. The increase in the discount rate is expected to reduce pension expense by \$542,000 for 2000. In 1999, the Company's liability and expense resulting from the Coal Industry Retiree Health Benefit Act of 1992 was reduced \$1,082,000 as a result of the increase in the discount rate to 8.0%. The increase in discount rate reduced the remaining postretirement benefits projected benefit obligation by \$953,000 for 1999 and had no material effect on the estimated expense for 2000. In 1998, the weighted-average discount rates were adjusted from 7.25% to 7.00% and that change did not materially impact 1999 and 1998 consolidated results of operations.

As further described in Note A to the consolidated financial statements, the Company is required to adopt SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities", on January 1, 2001. This new standard is not expected to have a material impact on the Company's consolidated results of operations or financial position.

Anticipated cash flows from operations and current financial resources are expected to meet the Company's needs during 1999. All financing alternatives are under constant review to determine their ability to provide sufficient funding at the least possible cost.

Results of Operations

The Company's net sales and operating revenues in 1999 of \$293,902,000 were 23% greater than the 1998 level of \$238,852,000 and more than doubled 1997 net sales and operating revenues of \$145,185,000. Operating income increased \$9,509,000, or 26%, to \$46,544,000 compared with 1998 and increased \$22,079,000, or 90%, from 1997. Net income was \$13,646,000 (\$2.80 per share, assuming dilution) for 1999 compared with \$12,036,000 (\$2.51 per share, assuming dilution) and \$16,252,000 (\$3.37 per share, assuming dilution) for 1998 and 1997, respectively. The increases in net sales and operating revenues and operating income are primarily attributable to the timing of the 1998 Acquisitions. The increase in net income in 1999 compared with 1998 is primarily due to the increase in operating income described above, plus non-recurring gains and a lower effective tax rate offset by a full year of interest expense on borrowings used to fund the 1998 Acquisitions and the 1999 Global Stone Winchester acquisition. The decrease in 1999 net income compared with 1997 is primarily the result of increased interest expense used to fund the 1998 Acquisitions and the 1999 Global Stone Winchester acquisition.

In 1999, net income includes the effect of goodwill amortization totaling \$2,830,000 (net of tax \$1,840,000 or \$0.38 per share, assuming dilution) primarily resulting from the 1998 acquisitions and prior Industrial Sands segment acquisitions. Net income for 1998 and 1997 include the effect of goodwill amortization totaling \$1,579,000 (net of tax \$1,026,000 or \$0.21 per share, assuming dilution) and \$549,000 (net of tax \$357,000 or \$0.07 per share, assuming dilution). Net income, excluding the amortization of goodwill, approximated \$15,486,000 (\$3.18 per share, assuming dilution) in 1999, compared with \$13,062,000 (\$2.73 per share, assuming dilution) and \$16,609,000 (\$3.45 per share, assuming dilution) in 1998 and 1997, respectively.

The operating results of the Company's business segments for 1999, 1998 and 1997 are discussed below.

Net Sales and Operating Revenues

Lime and Limestone. Net sales for the Lime and Limestone segment increased 55% to \$148,148,000 in 1999 compared with \$95,498,000 in 1998. The increase is the result of a full year of sales from the Global Stone and Filler Products acquisitions plus the additional sales from the 1999 Global Stone Winchester acquisition. 1998 sales include the operations of Port Inland, Global Stone and Filler Products as of their respective purchase dates of April 28, May 22, and August 31, 1998.

Industrial Sands. Net sales for the Industrial Sands segment increased by \$2,305,000, or 5%, to \$50,105,000 during 1999, compared with \$47,800,000 for the same period of 1998. The increase primarily resulted from the strong performance of the segment's non-oilfield operations in Orange County, California. The strong construction market in the southwestern United States increased tonnage shipped 8% in 1999 from 1998 and a favorable shift in product mix also increased pricing. The increase in sales from Orange County was partially offset by the decrease in shipments to the oilfield service industry in the first nine months of 1999 compared with 1998. This drop in sales resulted from a decline in oil prices and related oilfield demand for frac sands. Accordingly, the demand declined for sands provided to oilfields by the Brady, Texas, Bakersfield, California and Riverside, California operations. While net sales for these operations were down in 1999 compared with 1998, demand and net sales recovered in the fourth quarter of 1999, as oil prices increased compared with prior year. The segment's 1999 net sales increased \$621,000, or 1%, compared with 1997 net sales of \$49,484,000. The strong performance of Orange County, including tonnage increases and favorable pricing, as well as the 1998 acquisition of Colorado Silica substantially offset the effects of a 35% decline in net sales at the Brady, Texas operation. The decline in net sales at Brady is attributable to a similar decline in tonnage shipped, resulting from depressed oil field demand and pricing.

Marine Services. 1999 operating revenues for the Marine Services segment of \$94,558,000 decreased 1% compared to \$95,554,000 in 1998 and \$95,701,000 in 1997. Strong customer demand and favorable weather conditions increased sailing days to 3,477 in 1999 compared with 3,363 and 3,405 in 1998 and 1997, respectively. Favorable operating conditions at the end of 1999 and 1997 extended the fleet's sailing season in those years. In 1999 the vessel fleet hauled 23,141,000 tons, comparable to 1998 tonnage, but 3% off the record tonnage hauled during 1997. The tonnage shipped did not increase in the same proportion as the increase in sailing days because of substantially lower water levels on the Great Lakes. The vessels are limited in the cargo they carry by the depth of the lakes and rivers.

Corporate and Other. Net sales include the operations of Specialty Minerals as of its purchase date of December 1, 1999 and totaled \$1,091,000.

Cost of Goods Sold and Operating Expenses

Lime and Limestone. Cost of goods sold for the Lime and Limestone segment totaled \$99,413,000 in 1999, an increase of 52% from 1998's total of \$65,192,000. This increase is the result of the 1999 Global Stone Winchester acquisition and a full year of the Global Stone and Filler Products acquisitions. Cost of goods sold as a percentage of net sales was 67% in 1999 compared with 68% during 1998. This small improvement in margin is primarily the result of improved mining efficiency at the Luttrell, Tennessee operation.

Industrial Sands. Cost of goods sold for the Industrial Sands segment totaled \$30,573,000 in 1999 a decline of 1% from \$30,749,000 in 1998 and a 4% decline from \$31,732,000 in 1997 despite an increase in net sales in 1999, compared with 1998 and 1997. Cost of goods sold as a percentage of net sales was 61% during 1999, an improvement from 64% during 1998 and 1997. This improved margin is primarily the result of the improved operating efficiencies and full production capacity at our Orange County, California operations attributable to strong construction demand.

Marine Services. Operating expenses for the Marine Services segment totaled \$64,255,000 in 1999, an increase of 3% compared with \$62,590,000 in 1998. Operating expenses decreased 4% when compared with

\$67,210,000 in 1997. Operating expenses as a percentage of operating revenues were 68% for 1999 compared with 66% for 1998 and 70% for 1997. The increase in operating expenses in 1999 when compared with 1998 was the result of increased fuel costs. These higher costs, and more importantly, the lower water levels limiting tonnage shipped per vessel, increased operating expenses as a percentage of operating revenues in 1999 from 1998. The reduction in operating expenses in 1999 when compared to 1997 and the corresponding improvement in operating expenses as a percentage of operating revenues is the result of a reduction on insurance premiums and claims in 1999, and the elimination of charter fees after acquiring two vessels during 1997.

Corporate and Other. Cost of goods sold for Specialty Minerals totaled \$800,000, or 73%, in December of 1999 and was included in this category.

Depreciation, Depletion and Amortization

Depreciation, depletion and amortization expense increased to \$27,150,000 compared with \$20,875,000 during 1998 and \$8,947,000 during 1997. The increase in 1999 is principally related to the 1998 Acquisitions, including goodwill amortization. Depreciation, depletion and amortization from the 1998 Acquisitions was \$5,223,000 greater in 1999 compared with 1998, the result of a full year of ownership. The 1999 Global Stone Winchester and Specialty Minerals acquisitions added \$650,000 to the 1999 total. Depreciation, depletion and amortization as a percentage of revenue is 9% in both 1999 and 1998. Of the \$18,203,000 increase from 1999 compared with 1997, \$16,451,000 resulted from the 1999 Global Stone Winchester, Specialty Minerals, and the 1998 Acquisitions. Other increases were the result of quarry development at the Brady, Texas operation, expansion at the Orange County, California operation, as well as additional depreciation from vessel improvements and amortizing of capitalized vessel inspection costs.

General, Administrative and Selling Expenses

General, administrative and selling expenses increased to \$25,167,000 for 1999 compared with \$22,027,000 and \$12,828,000 for 1998 and 1997, respectively. The increase in general, administrative and selling expenses during 1999 is principally the result of the 1998 Acquisitions. As a percentage of total revenues, general, administrative and selling expenses remained comparable for all three years at 9%.

Operating Income

Lime and Limestone. The Lime and Limestone segment contributed \$22,156,000 in operating income in 1999. The acquisitions of Port Inland, Global Stone and Filler Products contributed \$11,943,000 to operating income in 1998. The increase of \$10,213,000 or 86% is primarily attributable to the timing of the Global Stone Winchester, Global Stone and Filler Products acquisitions. Additionally, the Company benefited from the seasonality of the Buchanan, Virginia operations, which has 70% of its operating income realized in the first five months of a fiscal year, and the improved mining efficiency realized at the Luttrell, Tennessee operation.

Industrial Sands. Operating income for the Industrial Sands segment increased 18% to \$9,723,000 during 1999 compared with \$8,247,000 during 1998, but decreased 7% compared with \$10,499,000 (a record for the segment) during 1997. The increase in operating income in 1999 compared with 1998 is primarily related to the increased demand in Orange County, California attributable to the strong construction market in the southwestern United States. The decline in operating income in 1999 from 1997 was principally the result of reduced oil field demand for frac sand supplied by the Brady, Texas operations, partially offset by the addition of the Colorado Silica acquisition and improvements in product mix and increased demand at the Orange County operations.

Marine Services. Operating income for the Marine Services segment decreased 13% to \$20,260,000 during 1999 compared with \$23,266,000 during 1998, but increased 2% compared with \$19,826,000 during 1997. The reduction in 1999 operating income compared with 1998 is the result of the lower Great Lakes water levels reducing the tonnage shipped per vessel, and increase in fuel prices. The slight increase in 1999 operating income compared with 1997 is the result of reduced insurance premiums and claims, as well as net savings realized on charter fees following the purchase of two vessels in 1997.

Corporate and Other. Included in this category are operating income are from other non-segment operations and corporate general and administrative expenses, which are not allocated to the business segments. Corporate and Other operations recognized an operating loss of \$5,595,000, \$6,421,000 and \$5,860,000 for 1999, 1998 and 1997, respectively. The reduction in loss was primarily the result of lower benefit plan costs.

Other

Interest expense increased in 1999 to \$29,947,000 from \$19,280,000 and \$2,834,000 during 1998 and 1997, respectively. The increase in interest expense was principally the result of increased debt levels and the amortization of financing costs incurred related to the 1998 Acquisitions. During 1999, the Company recognized net pretax gains of \$3,043,000 from the disposition of assets compared with \$125,000 for 1998 and \$5,548,000 for 1997. The gains recognized in 1999 were primarily from the sale of an inactive coal property and a dock in Detroit, Michigan. The gains recognized during 1997 principally represented a gain related to the sale of certain coal reserves. Other expense, net increased \$1,084,000 during 1999 when compared to 1998. The principal reason was the 1999 charge related to the accrual of an operating lease obligation on vacant space on the Company's corporate office as described in Note L to the consolidated financial statements. Other expense, net decreased \$334,000 in 1999 compared to 1997. The principal reason for this decrease was a reduction in the Coal Act expense partially offset by the rental expense charge described above.

ITEM 7A QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The response to this item is submitted in a separate section of this Annual Report on Form 10-K on page 15 under ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The response to this item is submitted in a separate section of this Annual Report on Form 10-K on pages F-1 through F-21.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None

PART III

ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE COMPANY

Information regarding Directors of the Company, as required by Part III, Item 10, is incorporated herein by reference to the information contained in the Company's proxy statement dated March 14, 2000, filed in connection with the Company's 2000 Annual Meeting of Stockholders.

The Executive Officers of the Company as of March 14, 2000 were as follows:

<u>Name</u>	<u>Age</u>	<u>Position</u>
John N. Lauer.....	61	Chairman, President and Chief Executive Officer
Michael F. Biehl.....	44	Vice President, Finance and Treasurer
Ronald J. Compiseno	48	Vice President, Human Resources
Jeffrey S. Gray	43	Vice President, Industrial Sands
David H. Kelsey.....	49	Vice President and Chief Financial Officer
Kenneth P. Pavlich.....	45	Vice President, Specialty Minerals
Danny R. Shepherd	48	Vice President, Lime and Limestone
Stuart H. Theis	57	Vice President, Marine Services
Rochelle F. Walk	39	Vice President and Secretary

John N. Lauer has served as President, Chief Executive Officer and Director of the Company since January 1, 1998 and as Chairman of the Board since July 1998. From 1994 to December 1997, Mr. Lauer was retired and pursued activities as a private investor. Mr. Lauer served as the President and Chief Operating Officer of The B.F. Goodrich Company, a chemical and aerospace company, from 1990 until 1994. Mr. Lauer also serves on the Boards of Directors of Diebold, Incorporated, Menasha Corporation and BorsodChem, Rt.

Michael F. Biehl has been Vice President, Finance and Treasurer since July 1998. Mr. Biehl joined the Company in 1992 as Corporate Controller and was promoted to Treasurer and Director of Finance in 1994. Prior to joining the Company, Mr. Biehl was a Senior Manager in the audit practice of Ernst & Young LLP in Cleveland, Ohio for 14 years.

Ronald J. Compiseno was elected Vice President, Human Resources in September 1998. Prior to joining the Company Mr. Compiseno was Group Director of Human Resources for Invacare Corporation of Elyria, Ohio.

Jeffrey S. Gray has served as Vice President, Industrial Sands and President, Oglebay Norton Industrial Sands, Inc. since August, 1999 and was Vice President, Corporate Development and General Counsel of the Company since March 17, 1997. Mr. Gray was an associate from 1987 to 1994 and a partner from 1995 to 1997 of Ulmer & Berne LLP, a law firm.

David H. Kelsey has been Vice President and Chief Financial Officer of the Company, since February 23, 1998. Prior to joining the Company, Mr. Kelsey served as the Executive Vice President and Chief Financial Officer of Host Communications, Inc., a sports marketing and management firm from 1994 to 1997. Prior to joining Host Communications, Mr. Kelsey was Senior Vice President and Director of GE Capital Equity Funding Group, a growth capital provider from 1992 to 1994 and was Senior Vice President and Portfolio Manager of GE Capital Corporate Finance Group, a provider of senior and mezzanine financing, from 1988 to 1992.

Kenneth P. Pavlich was elected Vice President, Specialty Minerals and President Oglebay Norton Specialty Minerals in December 1999 and was Vice President, Business Development for Oglebay Norton Specialty Minerals, Inc. and Vice President, Operations for Oglebay Norton Industrial Sands, Inc. from July 1998 until December 1999 and from December 1997 until July 1998, respectively. Mr. Pavlich was General Manager from 1992 to 1997 of Lone Tree Complex in Nevada for Newmont Mining Corporation.

Danny R. Shepherd was elected to the position of Vice President, Lime and Limestone and President of Global Stone Corporation in October 1998. Mr. Shepherd served as Executive Vice President and General Manager of Global Stone (U.S.A.) Eastern Region from 1994 to 1998.

Stuart H. Theis has been President Oglebay Norton Marine Services Company, L.L.C. since October 1998 and has served as a Vice President of the Company since 1993. From 1992 to 1993 he was Assistant to the President of the Company.

Rochelle F. Walk was elected Vice President of the Company in August 1999 and continues as Secretary of the Company, a position she has held since June 1998. Prior to joining the Company, she was Corporate Counsel, a Business Unit Director and Marketing Director of the Sherwin Williams Company.

Except as noted above, all executive officers of the Company have served in the capacities indicated, respectively, during the past five years. All executive officers serve at the pleasure of the Board of Directors, with no fixed term of office.

ITEM 11. EXECUTIVE COMPENSATION

Information regarding Executive Compensation, as required by Part III, Item 11; is incorporated herein by reference to the information contained in the Company's proxy statement dated March 14, 2000, filed in connection with the Company's 2000 Annual Meeting of Stockholders.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

Information regarding Security Ownership of Certain Beneficial Owners and Management, as required by Part III, Item 12, is incorporated herein by reference to the information contained in the Company's proxy statement dated March 14, 2000, filed in connection with the Company's 2000 Annual Meeting of Stockholders.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Information regarding Certain Relationships and Related Transactions, as required by Part III, Item 13, is incorporated herein by reference to the information contained in the Company's proxy statement dated March 14, 2000, filed in connection with the Company's 2000 Annual Meeting of Stockholders.

Stockholder Inquiries:

Copies of the SEC Form 10-K for 1999 are available on the company's Web site and will be provided without charge to stockholders upon written request to:

Rochelle F. Walk
Vice President and Secretary
Oglebay Norton Company
1100 Superior Avenue
Cleveland, OH 44114-2598
216-861-8734

PART IV

ITEM 14. EXHIBITS, FINANCIAL STATEMENT SCHEDULES AND REPORTS ON FORM 8-K

(a)(1) List of Financial Statements: The following consolidated financial statements of Oglebay Norton Company and its Subsidiaries are included in Item 8:

Report of Independent Auditors

Consolidated Statement of Operations—Years Ended December 31, 1999, 1998 and 1997

Consolidated Balance Sheet—December 31, 1999 and 1998

Consolidated Statement of Cash Flows—Years Ended December 31, 1999, 1998, and 1997

Consolidated Statement of Stockholders' Equity—Years Ended December 31, 1999, 1998, and 1997

Notes to Consolidated Financial Statements—December 31, 1999, 1998 and 1997

(a)(2) and (d) Financial Statement Schedules: No consolidated financial statement schedules are presented because the schedules are not required, the information is not present or not present in amounts sufficient to require submission of the schedules, or because the information required is included in the financial statements and related notes.

(a)(3) and (c) Exhibit Index: The response to this portion of Item 14 is submitted in a separate section of this Annual Report on Form 10-K at pages 1-1 through 1-6.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA
REPORT OF INDEPENDENT AUDITORS
BOARD OF DIRECTORS
OGLEBAY NORTON COMPANY

We have audited the accompanying consolidated balance sheet of Oglebay Norton Company and subsidiaries as of December 31, 1999 and 1998, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 1999. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Oglebay Norton Company and subsidiaries at December 31, 1999 and 1998, and the consolidated results of their operations and their cash flows for each of the three years in the period ended December 31, 1999, in conformity with accounting principles generally accepted in the United States.

/s/ ERNST & YOUNG LLP

Cleveland, Ohio
February 16, 2000

OGLEBAY NORTON COMPANY AND SUBSIDIARIES

CONSOLIDATED STATEMENT OF OPERATIONS

(In thousands, except per share amounts)

	Year Ended December 31		
	1999	1998	1997
NET SALES AND OPERATING REVENUES	\$293,902	\$238,852	\$145,185
COSTS AND EXPENSES			
Cost of goods sold and operating expenses	195,041	158,915	98,945
Depreciation, depletion and amortization.....	27,150	20,875	8,947
General, administrative and selling expenses.....	25,167	22,027	12,828
	<u>247,358</u>	<u>201,817</u>	<u>120,720</u>
OPERATING INCOME	46,544	37,035	24,465
Gain on disposition of assets	3,043	125	5,548
Interest expense.....	(29,947)	(19,280)	(2,834)
Other expense—net.....	<u>(1,269)</u>	<u>(185)</u>	<u>(1,603)</u>
INCOME FROM CONTINUING OPERATIONS			
BEFORE INCOME TAXES	18,371	17,695	25,576
INCOME TAXES			
Current.....	2,973	(2,256)	6,967
Deferred.....	<u>1,752</u>	<u>7,915</u>	<u>253</u>
	<u>4,725</u>	<u>5,659</u>	<u>7,220</u>
INCOME FROM CONTINUING OPERATIONS	13,646	12,036	18,356
Discontinued operations:			
Loss from discontinued operations	<u>-0-</u>	<u>-0-</u>	<u>(2,104)</u>
NET INCOME	<u>\$ 13,646</u>	<u>\$ 12,036</u>	<u>\$ 16,252</u>
PER SHARE AMOUNTS:			
Income (loss) per common share—basic:			
Continuing operations	\$ 2.81	\$ 2.52	\$ 3.84
Discontinued operations.....			<u>(.44)</u>
NET INCOME PER SHARE—BASIC	<u>\$ 2.81</u>	<u>\$ 2.52</u>	<u>\$ 3.40</u>
Income (loss) per common share—assuming dilution:			
Continuing operations	\$ 2.80	\$ 2.51	\$ 3.81
Discontinued operations.....			<u>(.44)</u>
NET INCOME PER SHARE—ASSUMING DILUTION	<u>\$ 2.80</u>	<u>\$ 2.51</u>	<u>\$ 3.37</u>

See notes to consolidated financial statements.

OGLEBAY NORTON COMPANY AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEET
(In thousands, except per share amounts)

	December 31	
	1999	1998
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	\$ -0-	\$ 1,940
Accounts receivable (net of reserve for doubtful accounts of \$1,215 in 1999 and \$1,194 in 1998)	46,088	36,624
Income taxes receivable	1,197	3,460
Inventories		
Raw materials and finished products	22,606	19,628
Operating supplies	10,098	8,822
	32,704	28,450
Deferred income taxes	2,384	2,511
Prepaid insurance and other expenses	5,523	5,070
TOTAL CURRENT ASSETS	87,896	78,055
PROPERTY AND EQUIPMENT		
Land and improvements	27,530	27,208
Mineral reserves	74,809	88,478
Buildings and improvements	38,500	26,550
Machinery and equipment	424,213	423,959
	565,052	566,195
Less allowances for depreciation, depletion and amortization	211,656	218,752
	353,396	347,443
GOODWILL (net of accumulated amortization of \$5,686 in 1999 and \$2,855 in 1998)	75,138	89,877
PREPAID PENSION COSTS	34,895	31,303
OTHER ASSETS	16,774	18,946
TOTAL ASSETS	\$568,099	\$565,624
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES		
Current portion of long-term debt	\$ 4,991	\$ 9,506
Accounts payable	13,208	10,332
Payrolls and other accrued compensation	10,878	10,446
Accrued expenses	10,461	14,909
Accrued interest expense	5,853	5,482
Income taxes payable	3,774	69
TOTAL CURRENT LIABILITIES	49,165	50,744
LONG-TERM DEBT, less current portion	296,715	302,560
POSTRETIREMENT BENEFITS OBLIGATION	25,856	27,182
OTHER LONG-TERM LIABILITIES	17,550	22,059
DEFERRED INCOME TAXES	37,804	36,146
STOCKHOLDERS' EQUITY		
Common stock, par value \$1.00 per share—authorized 10,000 shares; issued 7,253 shares	7,253	7,253
Additional capital	9,112	7,481
Retained earnings	156,617	146,852
Accumulated other comprehensive loss	(111)	(709)
	172,871	160,877
Treasury stock, at cost—2,326 and 2,488 shares at respective dates	(31,862)	(33,944)
	141,009	126,933
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$568,099	\$565,624

See notes to consolidated financial statements.

OGLEBAY NORTON COMPANY AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF CASH FLOWS
(In thousands)

	Year Ended December 31		
	1999	1998	1997
OPERATING ACTIVITIES			
Net income	\$ 13,646	\$ 12,036	\$ 16,252
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation, depletion and amortization.....	27,150	20,875	8,947
Deferred income taxes	1,752	7,915	253
Gain on disposition of assets	(3,043)	(125)	(5,548)
Loss on disposition of discontinued operations	-0-	-0-	1,262
Increase in prepaid pension costs	(3,592)	(4,458)	(4,205)
(Increase) decrease in accounts receivable.....	(12,739)	4,009	2,671
Decrease (increase) in income taxes receivable.....	2,263	(3,460)	-0-
Increase in inventories	(8,137)	(4,452)	(698)
Increase (decrease) in accounts payable.....	4,149	(8,637)	1,367
Increase in payrolls and other accrued compensation.....	399	1,800	882
(Decrease) increase in accrued expenses.....	(2,913)	(981)	715
Increase in accrued interest.....	371	4,791	643
Increase (decrease) in income taxes payable.....	3,671	(2,493)	1,465
Other operating activities.....	(481)	(671)	(1,071)
Net operating activities of discontinued operations	-0-	-0-	755
NET CASH PROVIDED BY OPERATING ACTIVITIES	22,496	26,149	23,690
INVESTING ACTIVITIES			
Capital expenditures.....	(25,939)	(19,119)	(24,554)
Acquisition of businesses.....	(45,656)	(239,639)	(1,600)
Proceeds from sale of assets	64,472	874	8,192
Proceeds from sale of discontinued operations	-0-	9,082	-0-
Net investing activities of discontinued operations.....	-0-	-0-	(662)
NET CASH USED FOR INVESTING ACTIVITIES	(7,123)	(248,802)	(18,624)
FINANCING ACTIVITIES			
Repayments on long-term debt.....	(244,715)	(94,629)	(8,476)
Additional long-term debt.....	232,588	302,650	17,000
Financing costs.....	(1,231)	(9,396)	-0-
Payments of dividends	(3,881)	(3,813)	(3,584)
Purchases of treasury stock.....	(319)	(600)	(1,970)
NET CASH (USED FOR) PROVIDED BY FINANCING ACTIVITIES	(17,558)	194,212	2,970
Effect of exchange rate changes on cash.....	245	495	-0-
(Decrease) increase in cash and cash equivalents	(1,940)	(27,946)	8,036
Cash and cash equivalents, January 1	1,940	29,886	21,850
CASH AND CASH EQUIVALENTS, DECEMBER 31	\$ -0-	\$ 1,940	\$ 29,886

See notes to consolidated financial statements.

OGLEBAY NORTON COMPANY AND SUBSIDIARIES
CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY

(Dollars in thousands, except per share amounts)

				Other Comprehensive Income (Loss)				
	Common Stock	Additional Capital	Retained Earnings	Unrealized Gains	Foreign Currency Translation Adjustment	Common Stock In Treasury	Unallocated Employee Stock Ownership Plan Shares	Total Stockholders' Equity
Balance, January 1, 1997	\$3,626	\$ 9,476	\$125,961	\$ 411		\$(31,834)	\$(1,191)	\$106,449
Comprehensive income:								
Net income			16,252					16,252
Change in unrealized gains				(411)				(411)
Total comprehensive income								15,841
Dividends, \$.75 per share.....			(3,584)					(3,584)
Stock plans		440				63	476	979
Two-for-one stock split.....	3,627	(3,627)						-0-
Purchases of treasury stock.....						(1,969)		(1,969)
Balance, December 31, 1997	7,253	6,289	138,629	-0-		(33,740)	(715)	117,716
Comprehensive income:								
Net income			12,036					12,036
Foreign currency translation adjustment.....					\$(709)			(709)
Total comprehensive income								11,327
Dividends, \$.80 per share.....			(3,813)					(3,813)
Stock plans		1,192				396	715	2,303
Purchases of treasury stock.....						(600)		(600)
Balance, December 31, 1998	7,253	7,481	146,852	-0-	(709)	(33,944)	-0-	126,933
Comprehensive income:								
Net income			13,646					13,646
Foreign currency translation adjustment.....					598			598
Total comprehensive income								14,244
Dividends, \$.80 per share.....			(3,881)					(3,881)
Shares issued for acquisition.....		818				682		1,500
Stock plans		813				1,719		2,532
Purchases of treasury stock.....						(319)		(319)
Balance, December 31, 1999	<u>\$7,253</u>	<u>\$ 9,112</u>	<u>\$156,617</u>	<u>\$ -0-</u>	<u>\$(111)</u>	<u>\$(31,862)</u>	<u>\$ -0-</u>	<u>\$141,009</u>

See notes to consolidated financial statements.

OGLEBAY NORTON COMPANY AND SUBSIDIARIES

NOTES TO FINANCIAL STATEMENTS—(Continued)

December 31, 1999, 1998 and 1997

(Dollars in thousands, except per share amounts)

NOTE A—ACCOUNTING POLICIES

Principles of Consolidation: The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. Intercompany transactions and accounts have been eliminated upon consolidation.

Cash Equivalents: The Company considers all highly liquid investments with a maturity of three months or less at the date of purchase to be cash equivalents. Cash equivalents are stated at cost which approximates market value.

Inventories: Inventories are stated at the lower of average cost (first-in, first-out method) or market.

Marketable Securities: Available-for-sale securities are carried at fair value, based on quoted market prices. Realized gains and losses on the sale of such securities are based on average cost.

Property and Equipment: Property and equipment are stated at cost. The Company provides depreciation on buildings and improvements and machinery and equipment using the straight-line method over the assets estimated useful lives that range from 2 to 60 years. Depletion of mineral reserves is recognized on a units-of-production basis.

Intangible Assets: Intangible assets, consisting primarily of the purchase price in excess of net assets of acquired businesses (“Goodwill”), are amortized using the straight-line method over the periods of expected benefit, which range from 15 to 40 years. Financing costs are amortized using the straight-line method over the periods of the loan agreements, which range from 3 to 10 years. Included in depreciation, depletion and amortization in the Consolidated Statement of Operations is goodwill amortization of \$2,830, \$1,579, and \$549 in 1999, 1998 and 1997, respectively.

Impairment of Long-Lived Assets: The Company assesses the recoverability of its long-lived and intangible assets by determining whether the amortization of the remaining balance of an asset over its remaining useful life can be recovered through undiscounted future operating cash flows. If impairment exists, the carrying amount of the related asset is reduced.

Foreign Currency Translation: The financial statements of the Company’s subsidiaries outside the United States (“U.S.”) are generally measured using the local currency as the functional currency. Assets and liabilities of these subsidiaries are translated at the rates of exchange at the balance sheet dates. Income and expense items are translated at average monthly rates of exchange. Translation adjustments are included in accumulated other comprehensive income (loss), a separate component of stockholders’ equity. Generally, gains and losses from foreign currency transactions of these subsidiaries and the U.S. parent are included in net income. Gains and losses from foreign currency transactions which hedge a net investment in a foreign subsidiary and from intercompany foreign currency transactions of a long-term investment nature are included in accumulated other comprehensive income (loss).

Derivative Financial Instruments: The Company periodically uses derivative financial instruments to manage its exposure to fluctuations in interest rates. The Company designates its interest rate swap agreements as hedges of specific debt instruments and recognizes the interest differentials as adjustments to interest expense over the terms of the related debt obligations. When using interest rate swap agreements, the intermediaries to such agreements expose the Company to the risk of nonperformance, though such risk is not considered likely under the circumstances. The Company does not hold or issue financial instruments for trading purposes.

OGLEBAY NORTON COMPANY AND SUBSIDIARIES

NOTES TO FINANCIAL STATEMENTS—(Continued)

December 31, 1999, 1998 and 1997

(Dollars in thousands, except per share amounts)

Stock Compensation: The Company accounts for stock based compensation in accordance with the provisions of Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees," and related interpretations.

Use of Estimates: The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the Company's consolidated financial statements and accompanying notes. Actual results could differ from those estimates and assumptions.

New Financial Accounting Standards: Statement of Financial Accounting Standard ("SFAS") No. 133, "Accounting for Derivative Instruments and Hedging Activities" was issued in 1998. This SFAS establishes accounting and reporting standards for derivative instruments and hedging activities. It requires that all derivatives be recognized as assets or liabilities on the balance sheet at fair value. The Company will adopt SFAS No. 133 on January 1, 2001, as currently required. The SFAS is not expected to have a material impact on the Company's consolidated results of operations or financial position.

Revenue Recognition: Sales are generally recognized when products are shipped to customers. Operating revenues are recognized as services are provided to customers over the Great Lakes sailing season.

Reclassifications: Certain amounts in prior years have been reclassified to conform to the 1999 consolidated financial statement presentation.

NOTE B—ACQUISITIONS AND DISPOSITIONS

In the first quarter of 1999, the Company's Lime and Limestone segment acquired the assets of the W.S. Frey Company ("Global Stone Winchester") for \$12,008 in cash and 50,000 restricted shares of the Company's common stock, issued from treasury, having a guaranteed value of \$1,500. Consideration for the acquisition also included non-competition and royalty payments of \$3,500 of which \$510 was paid at the date of acquisition with the balance being deferred. Global Stone Winchester operates a high purity limestone quarry and lime works and is located near two other of the Company's operations. In the fourth quarter of 1999, the Company acquired the assets of Franklin Industries' Mica business (renamed Oglebay Norton Specialty Minerals, Inc. ("Specialty Minerals")) for \$32,000 in cash. The business has two operations in the United States (North Carolina and New Mexico) and consists of mining reserves, production facilities, equipment and other assets used in the mining, processing, and distribution of mica.

The acquisitions were accounted for under the purchase method. The results of operations of for these acquisitions are included in the consolidated financial statements from the respective dates of acquisition. The purchase prices have been allocated, on a preliminary basis, based on estimated fair values at the dates of acquisition. The purchase price allocations will be finalized during 2000 as the asset and liability valuations are completed. Assuming the above acquisitions had taken place at the beginning of 1998, proforma results for 1999 and 1998 would not be materially different from the Company's actual results.

In the third quarter of 1999, the Company sold in separate transactions the stock of its (i) Global Stone Detroit Lime Company ("Detroit Lime") and (ii) Global Stone Ingersoll Ltd. ("Ingersoll") subsidiaries. The sale of Detroit Lime was completed in August 1999 with net proceeds of \$15,250. The sale of Ingersoll was completed in September 1999 with net proceeds of \$45,700. (Ingersoll was a non-guarantor subsidiary of the Company's Senior Subordinated Notes.) Detroit Lime and Ingersoll combined for 1999 revenues of \$20,564 and

OGLEBAY NORTON COMPANY AND SUBSIDIARIES

NOTES TO FINANCIAL STATEMENTS—(Continued)

December 31, 1999, 1998 and 1997

(Dollars in thousands, except per share amounts)

operating income of \$2,050. The net proceeds of \$60,950 were used to reduce amounts outstanding on the Company's Senior Credit Facility. In finalizing the purchase price allocation for the Global Stone acquisition, the underlying assets and liabilities of Detroit Lime and Ingersoll were adjusted to fair market value based upon an agreement entered into during the second quarter of 1999 to sell these entities. The re-allocation of the Global Stone purchase price resulted in a \$23,300 reduction in goodwill.

In the third quarter of 1999, the Company sold a dock, located in Detroit, Michigan for \$1,985 in cash. The sale resulted in a pretax gain of \$1,642 (net gain of \$1,067 or \$0.22 per share, assuming dilution). In the fourth quarter of 1999, the Company sold an inactive coal property for \$1,520 in cash. The sale resulted in a pretax and net gain of \$1,836 (or \$0.37 per share, assuming dilution).

In the first quarter of 1998, the Company's Industrial Sands segment acquired all of the outstanding common shares of Colorado Silica Sands, Inc. ("Colorado Silica") for \$6,127 in cash and a \$1,067 note payable over three years. In the second quarter of 1998, the Company acquired for cash all of the outstanding common shares of Global Stone Corporation ("Global Stone"), which is part of the Company's Lime and Limestone business segment. Global Stone had eight operations in the United States and Canada, engaged in the mining, production and marketing of lime, chemical limestone and construction aggregate used in a variety of manufacturing processes and industries, including iron and steel, pulp and paper, chemical, environmental, agricultural and construction. The total purchase price was \$227,600, including \$54,000 of net debt. In the second quarter of 1998, the Company also purchased the assets of a limestone operation in Port Inland, Michigan, ("Port Inland") part of the Company's Lime and Limestone business segment, for \$35,200 in cash. The acquisition included inventories, land, mineral reserves, equipment and other tangible property used in the business of mining, processing, marketing and distributing limestone, chemical limestone and construction aggregate. In the third quarter of 1998, the Company's Lime and Limestone segment purchased the assets of Filler Products, Inc., a privately owned producer of chemical limestone in Chatsworth, Georgia, for \$24,200 in cash. The acquisition included inventories, land, mineral reserves, equipment and other tangible property used in the business of mining, processing, marketing and distributing chemical limestone to the carpet and decorative gardening industries.

The following unaudited pro forma information presents a summary of consolidated results of operations for the Company and the acquisitions of Global Stone, Port Inland and Colorado Silica for the years ended December 31, 1998 and 1997 as if the acquisitions had occurred on January 1, 1997. The pro forma adjustments give effect to (i) the amortization of goodwill, (ii) the amortization of the write-up of mineral reserves to fair market value, (iii) the interest expense on debt incurred to fund the acquisitions and (iv) the related income tax effects. This unaudited pro forma information (i) assumes that the Company incurred all acquisition related debt as of January 1, 1997, (ii) included operating results for periods of time prior to the Company's ownership for certain business segments and (iii) takes into consideration expense reductions of \$1,200 during 1998 and \$1,600 during 1997, principally due to a reduction of general and administrative costs.

	<u>1998</u>	<u>1997</u>
Revenues.....	\$288,000	\$283,000
Net Income	6,300	9,800
Earnings per share—basic.....	1.31	2.04
Earnings per share—assuming dilution	1.30	2.03

The pro forma results do not necessarily represent results that would have occurred if the acquisitions had taken place on the basis assumed above, nor are they indicative of the results of future combined operations.

OGLEBAY NORTON COMPANY AND SUBSIDIARIES

NOTES TO FINANCIAL STATEMENTS—(Continued)

December 31, 1999, 1998 and 1997

(Dollars in thousands, except per share amounts)

In 1997, the Company purchased, for \$3,400 in cash and notes payable, the assets of two sand operations. Operating results for these businesses have been included within the Industrial Sands business segment since acquisition, and are not material. Additionally, two self-unloading vessels were purchased for \$17,000. These vessels have been operated on the Great Lakes under charter as part of the Company's Marine Services fleet for over 20 years. In the fourth quarter of 1997, the Company sold its interest in certain coal reserves for \$6,000 in cash. The sale resulted in a \$5,212 pretax gain (net gain of \$3,388 or \$0.70 per share, assuming dilution).

NOTE C—DISCONTINUED OPERATIONS

In December 1997, the Company decided to divest the assets of its Engineered Materials business segment. The loss upon disposition of these operations was \$1,262 (net of an income tax benefit of \$807 in 1997).

The results of discontinued operations were as follows:

	<u>1997</u>
Net sales	\$30,883
Cost of goods sold	<u>28,871</u>
Selling, general and administrative expenses	<u>3,355</u>
Loss before income taxes.....	(1,343)
Income tax benefit.....	<u>(501)</u>
Loss from discontinued operations.....	<u><u>\$ (842)</u></u>

NOTE D—NET INCOME PER SHARE

The calculation of net income per share—basic and assuming dilution follows (shares in thousands):

	<u>1999</u>	<u>1998</u>	<u>1997</u>
Net income per share—basic:			
Net income	<u>\$13,646</u>	<u>\$12,036</u>	<u>\$16,252</u>
Average number of shares outstanding	<u>4,857</u>	<u>4,772</u>	<u>4,785</u>
Net income per share—basic	<u><u>\$ 2.81</u></u>	<u><u>\$ 2.52</u></u>	<u><u>\$ 3.40</u></u>
Net income per share—assuming dilution:			
Net income	<u>\$13,646</u>	<u>\$12,036</u>	<u>\$16,252</u>
Average number of shares outstanding	<u>4,857</u>	<u>4,772</u>	<u>4,785</u>
Common stock equivalents	<u>13</u>	<u>14</u>	<u>31</u>
Adjusted average number of shares outstanding	<u><u>4,870</u></u>	<u><u>4,786</u></u>	<u><u>4,816</u></u>
Net income per share—assuming dilution	<u><u>\$ 2.80</u></u>	<u><u>\$ 2.51</u></u>	<u><u>\$ 3.37</u></u>

OGLEBAY NORTON COMPANY AND SUBSIDIARIES

NOTES TO FINANCIAL STATEMENTS—(Continued)

December 31, 1999, 1998 and 1997

(Dollars in thousands, except per share amounts)

NOTE E—INCOME TAXES

Total income taxes from continuing operations differs from the tax computed by applying the U.S. federal corporate income tax statutory rate for the following reasons:

	<u>1999</u>	<u>1998</u>	<u>1997</u>
Income from continuing operations before taxes.....	\$18,371	\$17,695	\$25,576
Income taxes at statutory rate	\$ 6,430	\$ 6,193	\$ 8,952
Tax differences due to:			
Percentage depletion	(1,377)	(943)	(1,271)
State income taxes	692	65	312
Goodwill amortization	692	254	-0-
Tax benefit on sale of subsidiaries	(1,809)	-0-	-0-
Other.....	97	90	(773)
Total income taxes	<u>\$ 4,725</u>	<u>\$ 5,659</u>	<u>\$ 7,220</u>

The Company received income tax refunds of \$4,660 and \$1,049 during 1999 and 1998, respectively. The Company made income tax payments of \$1,918, \$3,999 and \$6,161 during 1999, 1998 and 1997, respectively.

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's deferred tax liabilities and assets from continuing operations are as follows:

	<u>December 31</u>	
	<u>1999</u>	<u>1998</u>
Deferred tax liabilities:		
Tax over book depreciation, amortization and depletion.....	\$51,947	\$47,035
Pension benefits.....	12,466	10,916
Other.....	4,672	2,379
Total deferred tax liabilities.....	69,085	60,330
Deferred tax assets:		
Postretirement benefits	10,830	10,276
Coal Act liability.....	4,008	4,689
Alternative minimum tax credit carry forward	8,400	2,806
Other.....	10,428	8,924
Total deferred tax assets	33,666	26,695
Net deferred tax liabilities	<u>\$35,419</u>	<u>\$33,635</u>

OGLEBAY NORTON COMPANY AND SUBSIDIARIES

NOTES TO FINANCIAL STATEMENTS—(Continued)

December 31, 1999, 1998 and 1997

(Dollars in thousands, except per share amounts)

NOTE F—LONG-TERM DEBT

Long-term debt is as follows:

	<u>1999</u>	<u>1998</u>
Senior Credit Facility	\$175,980	\$171,000
Senior Subordinated Notes	100,000	100,000
Term Loans	16,577	16,754
Capital Leases	7,209	10,317
Notes Payable.....	1,940	6,545
Title XI Ship Financing Bonds.....	-0-	7,450
	<u>301,706</u>	<u>312,066</u>
Less current portion	4,991	9,506
	<u>\$296,715</u>	<u>\$302,560</u>

In the second quarter of 1998, the Company entered into a three-year \$215,000 revolving credit facility (“Senior Credit Facility”) with a group of banks to finance the acquisition of Global Stone, refinance debt and for other general purposes. In the first quarter of 1999, the Company’s Senior Credit Facility was increased to \$232,000 to finance the acquisition of Global Stone Winchester. The variable interest rate on the Senior Credit Facility approximated 8.2% at December 31, 1999. The agreement matures in May 2001, but is renewable annually thereafter at the discretion of the banks. The Company’s Senior Subordinated Notes, used to finance the Global Stone acquisition, mature in February 2009 and have a fixed interest rate of 10%. In 1999 the Company incurred \$1,158 of financing costs related to the exchange and private placement of these Senior Subordinated Notes and the amendment to the Senior Credit Facility. The Company incurred \$9,396 of financing costs during 1998 related to the Senior Subordinated Notes and Senior Credit Facility. The financing costs are being amortized over the terms of the respective agreements and are included in Other Assets on the consolidated balance sheet at December 31, 1999.

In 1997, the Company entered into a \$17,000 fixed rate Term Loan with a bank to finance the acquisition of two Marine Services vessels, which had previously been under charter agreements. The Company is required to make semi-annual payments on the Term Loan of \$775, including interest, through July 15, 2002; \$1,400 payable semi-annually, including interest, through January 15, 2007 and a final payment of \$7,951, including interest, on July 15, 2007. The loan is secured by mortgages on the two vessels, which have a net book value of \$16,334 at December 31, 1999. The Term Loan was amended in 1998 as a result of the Company’s increase in debt related to the acquisition of Global Stone. The amendment revised the Term Loan covenants to the same covenants contained in the Senior Credit Facility. In addition, the interest rate was changed from a fixed rate of 7.32% to a semi-variable maximum rate of 8.32% (fixed portion of rate is 7.82%). The interest rate at December 31, 1999 was 8.1%.

The Company’s debt agreements contain various covenants with the most restrictive covenants requiring the Company to maintain a specified level of earnings before interest, taxes, depreciation and amortization (EBITDA), a specified leverage ratio, a specified cash flow coverage ratio, and a limitation on capital distributions. The Company’s EBITDA, as defined, was \$77,313 at December 31, 1999, compared with a minimum specified level of \$66,000. The Company’s leverage ratio, as defined, was 3.9 at December 31, 1999 compared with a maximum of 5.0. The Company’s cash flow coverage ratio, as defined, was 1.45 compared with a minimum of 1.10. The Company’s capital distributions, which include payments of dividends and purchases of treasury stock, totaled \$4,200 compared with a maximum of \$10,000.

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NOTES TO FINANCIAL STATEMENTS—(Continued)

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The Company, in separate agreements which expire in 2000 and 2001, entered into interest rate swap agreements with banks to substitute fixed rates for LIBOR- based variable interest rates on notional amounts totaling \$90,000 at December 31, 1999. The Company's debt agreement with its bank group requires interest rate protection on fifty percent of its total senior secured debt. (The Company's existing fixed rate senior secured debt fulfills a portion of the fifty-percent protection requirement.) The swap agreements limit the effect of increases in the interest rates on any floating rate debt. The differential between fixed and floating rates is recorded as an increase or decrease to interest expense. The effect of these agreements is to cap the Company's interest rate exposure to 7.48% on \$90,000 of the Senior Credit Facility. As a result of these swap agreements, interest expense was \$154 greater in 1999 and \$55 greater in 1998 than if the Company had maintained its floating LIBOR pricing. At December 31, 1999 and 1998, the fair value of the Company's interest rate swaps is an asset of \$889 and liability of \$903, respectively and was estimated using valuation techniques based on discounted cash flows. The fair value of long-term debt was \$294,002 and \$307,625 at December 31, 1999 and 1998, respectively and was estimated by discounting future cash flows at currently available interest rates for borrowing arrangements with similar terms.

Substantially all of the Company's U.S. accounts receivable, inventories and property and equipment, which approximates \$407,850, secure long-term senior debt of \$198,392 at December 31, 1999. Long-term debt maturities are \$4,991 in 2000, \$178,514 in 2001 (the Senior Credit Facility expires in 2001, but is renewable annually thereafter), \$1,269 in 2002, \$1,954 in 2003, \$2,016 in 2004 and \$112,962 thereafter. The Company made interest payments of \$27,465, \$13,593, and \$2,353 during 1999, 1998, 1997, respectively.

NOTE G—STOCKHOLDERS' EQUITY

In 1997, the Company declared a two-for-one split of its common stock in the form of a 100% stock dividend to stockholders of record as of October 10, 1997. This stock split was recorded by a transfer, within stockholders' equity, of \$3,626 from additional capital to common stock for all periods presented, representing \$1.00 par value for each additional share issued.

The Company's preferred stock is issuable in series and the Board of Directors is authorized to fix the number of shares and designate the terms of each issue. At December 31, 1999 and 1998, 5,000,000 preferred stock shares were authorized. No preferred stock was issued or outstanding at December 31, 1999 and 1998. In 1987, under a Stockholder Rights Plan, as amended, the Company's Board of Directors declared a dividend consisting of one Right for each outstanding share of the Company's common stock. Upon certain "change in control" events, the Rights entitle the holder to purchase one one-hundredth of a share of the Company's Series C \$10.00 preferred stock for \$130.00 or one share of the Company's common stock for \$2.50, depending on the "change in control" circumstances. The Stockholder Rights Plan, which expires December 18, 2006, should not interfere with any merger or other business combination approved by the Board of Directors, because the Board, at its option, may redeem the Rights at a redemption price of \$0.05 per Right.

NOTE H—COMPANY STOCK PLANS

The Company's Long-Term Incentive Plan ("Plan"), adopted in 1996 and revised in 1999, permits grants of stock options, stock appreciation rights, restricted stock and other performance awards. Included in Additional Capital at December 31, 1999 and 1998 is \$563 and \$902, respectively, of obligations under the Plan, representing 23,000 and 38,000 "share units", respectively. "Share units" are calculated by taking the deferred payments and dividing by the stock market price on deferral date. Compensation expense under the Plan was \$25 in 1999, \$31 in 1998 and \$568 in 1997. Also as provided by the Plan, stock options have been granted to key employees. These options vest ratably over a four-year period and expire 10 years from the date of grant. The Company uses the intrinsic value method to account for employee stock options. No compensation expense

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has been recognized because the exercise price of the stock options equals the market price of the underlying common stock on the date of grant. There have been no stock appreciation rights, restricted stock or performance awards granted under the Plan.

In connection with an employment agreement (“Agreement”) the Company provided its Chairman, President and Chief Executive Officer (“CEO”) with a restricted common stock award, in lieu of annual cash compensation. In January 1998, upon the CEO’s completion of a \$1,000 personal investment in the Company’s common stock, the Company issued to the CEO 25,744 shares of common stock equal to the number of shares of common stock he acquired. Of the total shares issued, 5,148 became immediately vested and non-forfeitable. On January 1, 1999 another 5,148 shares became vested and non-forfeitable. The remaining shares are restricted at December 31, 1999 and become vested and non-forfeitable, ratably, on January 1, 2000, 2001 and 2003, as defined by the Agreement.

The CEO is entitled to all voting rights and any dividends on the restricted shares. Total compensation expense of \$965, computed based on the closing market price on the date the stock was issued, is being recognized over the vesting period. Compensation expense related to this award was \$193 and \$386 in 1999 and 1998, respectively. Also under the Agreement, the Company granted the CEO an option to acquire 380,174 common shares at an exercise price of \$38.00 per share. The option becomes exercisable in whole or in part on January 1, 2001 and expires June 30, 2005.

In 1998, the Company established a Director Fee Deferral Plan (the “Directors Plan”), which allows non-employee directors of the Company the option of deferring all or part of their fees in the form of “share units” or “deferred cash”. Any fees deferred as “share units” will be matched at 25% by the Company, but only in the form of additional “share units” Included in Additional Capital at December 31, 1999 and 1998 is \$289 and \$186, respectively, of obligations under the Directors Plan, representing 11,000 and 5,000 “share units”, respectively. Expense under the Directors Plan was \$179 and \$186 in 1999 and 1998, respectively.

A summary of the Company’s stock option activity and related information follows (shares in thousands):

	<u>Number of Shares</u>	<u>Weighted Average Exercise Price</u>	<u>Weighted Average Fair Value</u>
Options outstanding, January 1, 1997.....	-0-	-0-	
Granted	<u>50</u>	\$30.63	\$7.06
Options outstanding, December 31, 1997.....	50	30.63	
Granted—CEO	380	38.00	11.36
Granted—others.....	98	29.49	8.52
Forfeited.....	<u>(9)</u>	35.79	
Options outstanding, December 31, 1998.....	519	\$35.73	
Granted—Others.....	65	\$20.05	6.62
Forfeited.....	<u>(12)</u>	\$29.53	
Options outstanding, December 31, 1999.....	<u>572</u>	<u>\$34.07</u>	
Options exercisable, December 31, 1999	<u>41</u>	<u>\$29.76</u>	

Exercise prices for options outstanding as of December 31, 1999 ranged from \$20.00 to \$42.13. The weighted-average remaining contractual life of these options is 6.4 years.

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There were 1,003,000 common shares authorized for awards and distribution under all of the Company stock plans. At the end of 1999, 354,000 shares are reserved and remain available for use for the above plans.

As permitted, the Company has chosen to continue accounting for stock options at their intrinsic value. Under the alternative fair value method the estimated fair value of the options is amortized to expense over the options' vesting period. Had the fair value method of accounting been applied to the Company's stock option plan, the impact would be as follows:

	<u>1999</u>	<u>1998</u>	<u>1997</u>
Net income, as reported	\$13,646	\$12,036	\$16,252
Estimated fair value of stock option granted, net of taxes	(680)	(306)	(8)
Net income, as adjusted	<u>\$12,966</u>	<u>\$11,730</u>	<u>\$16,244</u>
Net income per share—assuming dilution	<u>\$ 2.80</u>	<u>\$ 2.51</u>	<u>\$ 3.37</u>
Net income per share, as adjusted—assuming dilution	<u>\$ 2.66</u>	<u>\$ 2.45</u>	<u>\$ 3.37</u>

The fair value for these options was estimated at the date of grant using a Black-Scholes option pricing model with the following weighted average assumptions: risk-free interest rates ranging from 5.1%–6.1%; dividend yields ranging from 2.0%–4.0%; volatility factors of the expected market price of the Company's common shares of 44%, 31% and 22% in 1999, 1998 and 1997, respectively; and a weighted-average expected life of five years for the options. Since changes in the subjective input assumptions can materially affect the fair value estimate, in management's opinion, the existing models do not necessarily provide a reliable single measure of the fair value of its employee stock options.

NOTE I—POSTRETIREMENT BENEFITS

The Company has a number of noncontributory defined benefit pension plans covering certain employees. The plans provide benefits based on the participant's years of service and compensation, or state amounts for each year of service. The Company's funding policy is to contribute amounts to the plans sufficient to meet the minimum funding required by applicable regulations. In addition to pension benefits, the Company provides health care and life insurance for certain retired employees. Substantially all of the Company's employees are eligible for these benefits when they reach normal retirement age. The Company's policy is to fund these postretirement benefit costs principally on a cash basis as claims are incurred. The Coal Industry Retiree Health Benefit Act of 1992 ("Coal Act") requires companies that previously mined coal to assume certain health care benefit obligations for retired coal miners and their dependents.

OGLEBAY NORTON COMPANY AND SUBSIDIARIES

NOTES TO FINANCIAL STATEMENTS—(Continued)

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A summary of the Company's pension and other benefits is as follows:

			Other Benefits ²			
			Postretirement Health Care		Coal Act	
	Pension Benefits ¹		1999	1998	1999	1998
	1999	1998				
Change in benefit obligations						
Benefit obligation at beginning of year	\$ 70,529	\$ 61,443	\$ 20,324	\$ 14,976	\$ 12,023	\$ 13,551
Service cost.....	1,775	1,708	623	528		
Interest cost.....	4,424	4,530	1,389	1,276	931	909
Amendments	1,701	78				
Actuarial (gain) loss	(6,730)	1,023	140	1,751	(1,897)	(1,423)
Benefits paid	(4,995)	(4,924)	(1,022)	(1,257)	(780)	(1,014)
Acquisitions		6,671	1,209	3,050		
Divestitures	(5,561)		(3,007)			
Benefit obligations at end of year ³	61,143	70,529	19,656	20,324	10,277	12,023
Change in plan assets						
Fair value of plan assets at beginning of year	111,406	102,934	131	103		
Actual return on plan assets	11,208	6,883	5	3		
Employer contributions	283	1,103	25	25		
Benefits paid	(4,995)	(4,924)				
Acquisitions		5,410				
Divestitures	(5,038)					
Fair value of plan assets at end of year	112,864	111,406	161	131		
Funded status	51,721	40,877	(19,495)	(20,193)	(10,277)	(12,023)
Unrecognized net actuarial gain.....	(21,144)	(13,350)	(5,203)	(5,638)		
Unrecognized prior service cost (credit).....	3,353	1,993	(1,158)	(1,350)		
Unrecognized initial net asset	(1,689)	(2,251)				
Net amount recognized.....	<u>\$ 32,241</u>	<u>\$ 27,269</u>	<u>\$(25,856)</u>	<u>\$(27,181)</u>	<u>\$(10,277)</u>	<u>\$(12,023)</u>
Amounts recognized in the balance sheet consist of:						
Prepaid benefit cost	\$ 34,895	\$ 30,151				
Intangible asset		1,152				
Prepaid pension costs	34,895	31,303				
Accrued long-term benefit liability	(2,654)	(4,034)	\$(25,856)	\$(27,181)	\$(10,277)	\$(12,023)
Net amount recognized.....	<u>\$ 32,241</u>	<u>\$ 27,269</u>	<u>\$(25,856)</u>	<u>\$(27,181)</u>	<u>\$(10,277)</u>	<u>\$(12,023)</u>

OGLEBAY NORTON COMPANY AND SUBSIDIARIES

NOTES TO FINANCIAL STATEMENTS—(Continued)

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(Dollars in thousands, except per share amounts)

	Pension Benefits¹	
	1999	1998
Weighted-average assumption as of December 31		
Discount rate	8.00%	6.50%–7.00%
Expected return on plan assets	9.00%	7.50%–9.00%
Rate of compensation increase	4.00%	4.00%

	Other Benefits²			
	Postretirement Health Care		Coal Act	
	1999	1998	1999	1998
Weighted-average assumption as of December 31				
Discount rate	8.00%	6.50%–7.00%	8.00%	7.00%
Expected return on plan assets	6.00%	6.00%		

For measurement purposes on the Company's postretirement health care a 7.25% annual rate of increase in the per capita cost of covered pre-65 health care benefits was assumed for 2000. The rate was assumed to decrease gradually to 6.0% for 2003 and remain at that level thereafter. The post-65 benefits on the Company's postretirement health care are assumed at a 6.0% annual rate of increase in per capita cost for 2000 and thereafter. The Coal Act's weighted-average annual assumed rate of increase in the health care cost trend rate for 1999 and 1998 is 6.0%.

	Pension Benefits¹		
	1999	1998	1997
Components of net periodic benefit credit			
Service cost	\$ 1,775	\$ 1,708	\$ 1,114
Interest cost	4,424	4,530	4,255
Expected return on plan assets	(9,558)	(9,659)	(7,831)
Amortization of prior service cost	341	298	437
Amortization of initial net asset	(563)	(711)	(711)
Recognized net actuarial gain	(305)	(735)	(37)
Net periodic benefit credit	<u><u>\$(3,886)</u></u>	<u><u>\$(4,569)</u></u>	<u><u>\$(2,773)</u></u>

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NOTES TO FINANCIAL STATEMENTS—(Continued)

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	Other Benefits ²					
	Postretirement Health Care			Coal Act		
	1999	1998	1997	1999	1998	1997
Components of net periodic benefit cost (credit)						
Service cost	\$ 623	\$ 528	\$ 379			
Interest cost	1,389	1,276	1,069	\$ 931	\$ 909	\$ 974
Expected return on plan assets	(8)	(6)	(5)			
Amortization of prior service cost	(192)	(192)	(192)			
Recognized net actuarial gain	(246)	(534)	(404)	(1,889)	(1,361)	(121)
Net periodic benefit cost (credit)	<u>\$1,566</u>	<u>\$1,072</u>	<u>\$ 847</u>	<u>\$ (958)</u>	<u>\$ (452)</u>	<u>\$ 853</u>

Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plans. A one-percentage point change in assumed health care cost trend rates would have the following effects:

	Other Benefits ²			
	Postretirement Health Care		Coal Act	
	1% Increase	1% Decrease	1% Increase	1% Decrease
Effect on total of service and interest cost components	\$ 313	\$ (249)	\$ 118	\$ (96)
Effect on postretirement benefit obligation	2,447	(2,007)	1,115	(923)

¹ Reflects the combined Pension Plans of the Company.

² Reflects the Postretirement Health Care, Life Insurance Plans of the Company and benefits required under the 1992 Coal Act. Net periodic benefit cost for the Coal Act declined in 1999 as a result of a decline in the number of beneficiaries assigned to the Company and an increase in the discount rate.

³ Benefit obligations at the end of 1998 include Canadian pension and postretirement health care benefit obligations of \$5,561 and \$3,007, respectively. No such obligations exist in 1999, the result of a Company disposition in 1999.

The projected benefit obligation, accumulated benefit obligation, and fair value of plan assets for the pension plans with accumulated benefit obligations in excess of plan assets were \$2,301, \$2,210 and \$0, respectively, as of December 31, 1999 and \$10,559, \$10,514 and \$7,098, respectively, as of December 31, 1998.

The discount rate on the Company's pension and other benefit plans was increased to 8.0%, at December 31, 1999 from 7.0% in 1998. This change resulted in a decrease of \$8,680 in the projected benefit obligation of these benefit plans.

Pension plan assets include 293,000 shares of the Company's common stock at December 31, 1999 and 1998. The ending market values for these shares were \$6,959 in 1999 and \$7,252 in 1998. Dividends received during both 1999 and 1998 for these shares totaled \$234.

The Company maintains defined contribution plans for certain employees and contributes to these plans based on a percentage of employee contributions. The expense for these plans was \$1,419, \$1,533 and \$1,039 for 1999, 1998 and 1997, respectively. The Company also pays into certain defined benefit multi-employer plans

OGLEBAY NORTON COMPANY AND SUBSIDIARIES

NOTES TO FINANCIAL STATEMENTS—(Continued)

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under various union agreements that provide pension and other benefits for various classes of employees. Payments are based upon negotiated contract rates and related expenses totaled \$1,099 \$1,166 and \$1,688 for 1999, 1998 and 1997, respectively.

NOTE J—COMMITMENTS AND CONTINGENCIES

The Company leases various buildings, computers and equipment in addition to a vessel charter in its Marine Services fleet. In general, these operating leases are renewable or contain purchase options. The purchase price or renewal lease payment is based on the fair market value of the asset at the date of purchase or renewal. Rental expense was \$6,024, \$5,076 and \$3,718 in 1999, 1998 and 1997, respectively.

Future minimum payments at December 31, 1999, under non-cancelable operating leases, are \$5,794 in 2000, \$4,873 in 2001, \$4,052 in 2002, \$3,153 in 2003, \$2,044 in 2004 and \$10,759 thereafter.

The Company is subject to various environmental laws and regulations imposed by federal, state and local governments. Also, in the normal course of business, the Company is involved in various pending or threatened legal actions. The Company cannot reasonably estimate future costs, if any, related to these matters. However, costs incurred to comply with environmental regulations and to settle litigation have not been significant in 1999 and prior years. Although it is possible that the Company's future operating results could be affected by future costs of environmental compliance or litigation, it is management's belief that such costs will not have a material adverse effect on the Company's consolidated financial position.

NOTE K—INDUSTRY SEGMENTS AND MAJOR CUSTOMERS

The Company supplies essential natural resources to industrial and commercial customers. Through its three operating segments—Lime and Limestone, Industrial Sands and Marine Services—the Company serves customers, through a direct sales force, in a wide range of industries, including steel, construction, oil, ceramic, chemical, glass and electric utilities. Founded in 1854, the Company is headquartered in Cleveland, Ohio. The composition of the segments and measure of segment profitability is consistent with that used by the Company's management. The Company's primary measurement focus is operating income and EBITDA. Interest expense and other expense-net are grouped with Corporate and Other and not presented by segment, since they are excluded from the measure of segment profitability used by the Company's management.

Lime and Limestone

The lime and limestone business segment, headquartered in Roswell, Georgia, mines and processes limestone and produces lime, a limestone derivative. This business segment operates eight facilities, primarily in the eastern United States. Lime is used for water and waste treatment, steel making, flue gas desulfurization, glass production, animal feed, fertilizers, and fillers for plastic, latex, and sealants. Chemical limestone is used for many diverse industrial and agricultural processes, including fiberglass, roofing shingles and animal feed. Limestone is sized and graded for lawn and garden applications as well as for aggregates in construction.

Industrial Sands

The Industrial Sands business segment, headquartered in Phoenix, Arizona, mines and processes high-purity silica sands at two facilities in Ohio and six facilities in the southwestern United States. It produces fracturing sands used in oil well drilling; filtration sands; recreational sands for golf courses, playgrounds, athletic fields, and landscaping; industrial sands used as abrasives and for fillers in building materials; silica flour for fiberglass and ceramic production; and foundry sands for hot-metal die casting.

OGLEBAY NORTON COMPANY AND SUBSIDIARIES

NOTES TO FINANCIAL STATEMENTS—(Continued)

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(Dollars in thousands, except per share amounts)

Marine Services

The Marine Services business segment, headquartered in Cleveland, Ohio, provides dry bulk transportation between United States' ports on the Great Lakes. This business segment operates 12 self-unloading vessels. The fleet transports primarily iron ore for integrated steel manufacturers, coal for electric utility companies, and limestone for construction and other purposes.

Geographic information for revenues and long-lived assets are as follows:

<u>1999</u>	<u>Revenues (a)</u>	<u>Long-Lived Assets</u>
United States.....	\$279,597	\$397,505
Canada and other foreign	14,305	
Consolidated	<u>\$293,902</u>	<u>\$397,505</u>
<u>1998</u>		
United States.....	\$227,129	\$360,864
Canada and other foreign	11,723	28,327
Consolidated	<u>\$238,852</u>	<u>\$389,191</u>
<u>1997</u>		
United States.....	\$144,348	\$181,995
Canada and other foreign	837	
Consolidated	<u>\$145,185</u>	<u>\$181,995</u>

(a) Revenues are attributed to countries based on the location of customers.

Accounts receivable of \$9,321, \$8,873 and \$5,416 are due from companies in the utilities, steel and construction industries, respectively, at December 31, 1999. Credit is extended based on an evaluation of a customer's financial condition, and generally collateral is not required. Credit losses within these industries have not been significant for the three years in the period ended December 31, 1999. There were no customers that exceeded 10% of consolidated net sales and operating revenues in 1999 or 1998. In 1997, Marine Services' operating revenues from two major steel producers (\$37,362) and one utility company (\$18,245) exceeded 10% of consolidated net sales and operating revenues.

OGLEBAY NORTON COMPANY AND SUBSIDIARIES

NOTES TO FINANCIAL STATEMENTS—(Continued)

December 31, 1999, 1998 and 1997

(Dollars in thousands, except per share amounts)

	<u>Lime and Limestone³</u>	<u>Industrial Sands</u>	<u>Marine Services</u>	<u>Total Segments</u>	<u>Corporate and Other⁴</u>	<u>Consolidated</u>
1999						
Identifiable assets.....	\$ 283,708	\$ 59,024	\$ 139,740	\$ 482,472	\$ 85,627 ¹	\$568,099
Depreciation, depletion and amortization expense	15,680	4,726	6,380	26,786	364	27,150
Capital expenditures	17,087	4,501	4,113	25,701	238	25,939
Net sales and operating revenues	\$ 148,148	\$ 50,105	\$ 94,558	\$ 292,811	\$ 1,091	\$ 293,902
Operating income	\$ 22,156	\$ 9,723	\$ 20,260	\$ 52,139	\$ (5,595) ²	\$ 46,544
Gain (loss) on disposition of assets	(98)	21		(77)	3,120	3,043
Interest expense					(29,947)	(29,947)
Other expense—net					(1,269)	(1,269)
Income from continuing operations before income taxes	<u>\$ 22,058</u>	<u>\$ 9,744</u>	<u>\$ 20,260</u>	<u>\$ 52,062</u>	<u>\$(33,691)</u>	<u>\$ 18,371</u>
1998						
Identifiable assets.....	\$ 321,892	\$ 52,248	\$ 137,969	\$ 512,109	\$ 53,515 ¹	\$ 565,624
Depreciation, depletion and amortization expense	10,581	3,914	6,252	20,747	128	20,875
Capital expenditures	8,322	6,069	4,703	19,094	25	19,119
Net sales and operating revenues	\$ 95,498	\$ 47,800	\$ 95,554	\$ 238,852		\$ 238,852
Operating income	\$ 11,943	\$ 8,247	\$ 23,266	\$ 43,456	\$ (6,421) ²	\$ 37,035
Gain (loss) on disposition of assets	76	213		289	(164)	125
Interest expense					(19,281)	(19,281)
Other expense—net					(184)	(184)
Income from continuing operations before income taxes	<u>\$ 12,019</u>	<u>\$ 8,460</u>	<u>\$ 23,266</u>	<u>\$ 43,745</u>	<u>\$(26,050)</u>	<u>\$ 17,695</u>
1997						
Identifiable assets.....		\$ 40,928	\$ 143,554	\$ 184,482	\$ 78,742 ¹	\$ 263,224
Depreciation, depletion and amortization expense		3,150	5,654	8,804	143	8,947
Capital expenditures		4,108	20,234	24,342	212	24,554
Net sales and operating revenues		\$ 49,484	\$ 95,701	\$ 145,185		\$ 145,185
Operating income		\$ 10,499	\$ 19,826	\$ 30,325	\$ (5,860) ²	\$ 24,465
Gain on disposition of assets.....		197		197	5,351	5,548
Interest expense					(2,834)	(2,834)
Other expense—net					(1,603)	(1,603)
Income from continuing operations before income taxes		<u>\$ 10,696</u>	<u>\$ 19,826</u>	<u>\$ 30,522</u>	<u>\$ (4,946)</u>	<u>\$ 25,576</u>

¹ Consists primarily of prepaid pension costs and other assets each year. In 1999, also included the assets of Speciality Minerals. In 1997, also included cash and cash equivalents and net assets of discontinued operations.

² Includes other operations, net of corporate general and administrative expenses.

³ Includes the results of operations of Global Stone Winchester from the acquisition date of March 1999; and Port Inland, Global Stone and Filler Products from their acquisition dates of April, May and August 1998, respectively.

⁴ Includes the results of operations of Speciality Minerals from its acquisition date of December 1999.

OGLEBAY NORTON COMPANY AND SUBSIDIARIES

NOTES TO FINANCIAL STATEMENTS—(Continued)

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NOTE L—QUARTERLY RESULTS OF OPERATIONS (UNAUDITED)

Unaudited quarterly results of operations for the years ended December 31, 1999 and 1998 are summarized as follows:

	Quarter Ended			
	Dec. 31	Sept. 30	June 30	Mar. 31
1999				
Net sales and operating revenues	\$76,780	\$85,377	\$86,657	\$45,088
Gross profit.....	19,201	21,411	21,932	9,167
Net income	4,354	6,430	5,877	(3,015)
Per common share:				
Net income (loss)—basic	0.89	1.32	1.21	(0.63)
Net income (loss)—assuming dilution	0.88	1.32	1.21	(0.63)
1998				
Net sales and operating revenues	\$74,974	\$85,845	\$63,726	\$14,307
Gross profit.....	15,925	22,455	16,464	4,219
Net income	1,127	5,680	5,449	(220)
Per common share:				
Net income (loss)—basic	0.24	1.19	1.14	(0.05)
Net income (loss)—assuming dilution	0.24	1.19	1.13	(0.05)

The sum of per share amounts for the four quarters of 1999 do not equal the annual per share amounts as a result of treasury stock purchases and the effect of stock options granted by the Company.

See Note B for the timing of acquisitions and dispositions that impact quarter-to-quarter comparisons.

Net income for the fourth quarter of 1999 includes: a gain of \$1,835 (\$0.37 per share, assuming dilution) related to the sale of an inactive coal property; a \$979 gain (\$0.20 per share, assuming dilution) as a result of a decline in the number of beneficiaries assigned to the Company under the Coal Act and an increase in the discount rate; and a \$1,069 (\$0.22 per share, assuming dilution) charge related to the accrual of an operating lease obligation on vacant space in the Company's corporate office.

Net income for the second quarter of 1999 includes a gain of \$1,067 (\$0.22 per share, assuming dilution) related to the sale of a dock located in Detroit, Michigan.

Net income for the fourth quarter of 1998 includes \$967 (\$0.20 per share, assuming dilution) as a result of a decline in the number of beneficiaries assigned to the Company under the Coal Act, and a \$773 (\$0.16 per share, assuming dilution) charge primarily related to separation benefits provided to former Global Stone management.

Item 14(a)3

EXHIBIT INDEX

SEC Exhibit No.	Description	Location**
2	Agreement and Plan of Merger, dated March 3, 1999, by and among Oglebay Norton Company, Oglebay Norton Holding Company, ONCO Investment Company and Oglebay Norton Merger Company	Incorporated by reference in Exhibit 2 of the Registrant's Form 8-K filed March 19, 1999
3	(i) Certificate of Incorporation	Incorporated by reference in Exhibit 4.1 in the Registrant's Form 8-K filed March 19, 1999
	(ii) By-Laws	Incorporated by reference in Exhibit 4.2 in the Registrant's Form 8-K filed March 19, 1999
	(iii) Amendment to By-Laws, dated March 9, 1999	Incorporated by reference in Exhibit 3(iii) in the Registrant's Form 10-K filed March 22, 1999
4	(a) The Company is a party to instruments, copies of which will be furnished to the Securities and Exchange Commission upon request, defining the rights of holders of its long-term debt identified in Note F to the Consolidated Financial Statements.	
	(b) Form of Rights Agreement (including first and second amendments)	Incorporated by reference in Exhibit 4(b) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1993
	(c) Form of Third Amendment to Rights Agreement, dated as of August 31, 1994, between Company and the Rights Agent	Incorporated by reference in Exhibit 4(c) to Amendment No. 3 to Form 8-A/A, filed on September 26, 1994
	(d) Form of Fourth Amendment of Rights Agreement, dated as of January 21, 1997, between Company and the Rights Agent	Incorporated by reference in Exhibit 4(d) to Form 8-A/A, filed on January 21, 1997
	(e) Form of Fifth Amendment of Rights Agreement, dated as of October 28, 1998, between Company and the Rights Agent	Incorporated by reference in Exhibit 4(e) to Form 8-A/A, filed November 20, 1998
10	(a) Form of Change-in-Control Agreements with Executive Officers and key employees*	Incorporated by reference in Exhibit 10(d)(3) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1996

* Indicates management contracts or compensatory plans or arrangements in which one or more directors or executive officers of the Company may be participants.

** As appropriate, indicates filing made on behalf of predecessor Registrant's, ON Marine Services Company, a Delaware corporation, before March 8, 1999 known as Oglebay Norton Company.

SEC Exhibit No.	Description	Location**
	(a)(1) Schedule of Executive Officers and key employees with Change-in-Control Agreements*	Filed herewith as Exhibit 10(a)(1)
	(b) Agreement with John D. Weil	Incorporated by reference in Exhibit 10(f) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1993
	(b)(1) First Amendment to Agreement with John D. Weil	Filed herewith as Exhibit 10(b)(1)
	(c) Oglebay Norton Company Long-Term Incentive Plan*	Incorporated by reference in Exhibit 10(h) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1995
	(d) Form of Oglebay Norton Company 1999 Long-Term Incentive Plan*	Filed herewith as Exhibit 10(d)
	(e) Amended and Restated Director Stock Plan*	Incorporated by reference in Exhibit 10(i)(1) in the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 1997
	(e)(1) First Amendment to Amended and Restated Director Stock Plan*	Filed herewith as Exhibit 10(e)(1)
	(f) Supplemental Savings and Stock Ownership Plan*	Incorporated by reference in Exhibit 10(j) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1996
	(f)(1) First Amendment to Oglebay Norton Company Supplemental Savings and Stock Ownership Plan*	Incorporated by reference in Exhibit 10(j)(1) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1996
	(f)(2) Second Amendment to Oglebay Norton Company Supplemental Savings and Stock Ownership Plan*	Incorporated by reference in Exhibit 10(j)(2) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1996
	(f)(3) Form of Third Amendment to Oglebay Norton Company Supplemental Savings and Stock Ownership Plan*	Incorporated by reference in Exhibit 10(h)(3) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1997
	(g) Irrevocable Trust Agreement I*	Incorporated by reference in Exhibit 10(k) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1996

* Indicates management contracts or compensatory plans or arrangements in which one or more directors or executive officers of the Company may be participants.

** As appropriate, indicates filing made on behalf of predecessor Registrant's, ON Marine Services Company, a Delaware corporation, before March 8, 1999 known as Oglebay Norton Company.

Description	Location**
(h) Irrevocable Trust Agreement II*	Incorporated by reference in Exhibit 10(l) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1996
(i) Executive Life Insurance Program I (Form of letter Agreement)*	Incorporated by reference in Exhibit 10(m) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1996
(j) Executive Life Insurance Program II (Program description)*	Incorporated by reference in Exhibit 10(n) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1996
(k) Oglebay Norton Company Excess and TRA Supplemental Benefit Retirement Plan (January 1, 1991 Restatement)*	Incorporated by reference in Exhibit 10(o) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1996
(k)(1) First Amendment to Oglebay Norton Company Excess and TRA Supplemental Benefit Retirement Plan (January 1, 1991 Restatement), dated as of December 15, 1994*	Incorporated by reference in Exhibit 10(o)(1)) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1996
(k)(2) Form of Second Amendment to Oglebay Norton Company Excess and TRA Supplemental Benefit Retirement Plan (January 1, 1991 Restatement), dated as of December 17, 1997*	Incorporated by reference in Exhibit 10(m)(2) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1997
(l) Credit Agreement dated of May 15, 1998 among Oglebay Norton Company, as Borrower, various financial institutions, as Banks, and KeyBank National Association, as agent	Incorporated by reference in Exhibit 10.2 in the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 1998
(l)(1) First Amendment to Credit Agreement dated as of May 15, 1998 among Oglebay Norton Company, as Borrower, various financial institutions, Banks, and KeyBank National Association, as agent	Incorporated by reference in Exhibit 10.1 in the Registrant's Quarterly Report on as Form 10-Q for the quarter ended September 30, 1998
(l)(2) Second Amendment to Credit Agreement dated as of May 15, 1998 among Oglebay Norton Company, as Borrower, various financial institutions, as Banks, and KeyBank National Association, as agent	Incorporated by reference in Exhibit 10.2 in the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 1998

* Indicates management contracts or compensatory plans or arrangements in which one or more directors or executive officers of the Company may be participants.

** As appropriate, indicates filing made on behalf of predecessor Registrant's, ON Marine Services Company, a Delaware corporation, before March 8, 1999 known as Oglebay Norton Company.

(l)(3) Third Amendment to Credit Agreement as dated of May 15, 1998 among Oglebay Norton Company, as Borrower, various financial institutions, as Banks, and KeyBank National Association, as agent

Incorporated by reference in Exhibit 10(m)(3) in the Registrant's Annual Report on Form 10-k for the year ended December 31, 1998

(m)(4) Fourth Amendment to Credit Agreement dated as of May 15, 1998 among Oglebay Norton Company, as Borrower, various financial institutions, as Banks, and KeyBank National Association, as agent

Incorporated by reference in Exhibit 10 in the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 1999

(m)(5) Fifth Amendment to Credit Agreement dated as of May 15, 1998 among Oglebay Norton Company, as Borrower, various financial institutions, as Banks, and KeyBank National Association, as agent

Incorporated by reference in Exhibit 10 in the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 1999

(m)(6) Assignment and Assumption Agreement dated March 5, 1999 in which Registrant assumed the obligations of ON Marine Services Company (formerly Registrant) under the Credit Agreement dated May 15, 1998.

Incorporated by reference in Exhibit 10(m)(4) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1999

(n) Annual Incentive Plan (Performance Management Plan) (plan description)*

Incorporated by reference in Exhibit 10(q) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1996

(o) Employment Agreement between Company and John N. Lauer, dated December 17, 1997*

Incorporated by reference in Exhibit 10(r) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1997

(p) Supplemental Letter between Company and John N. Lauer, dated December 17, 1997*

Incorporated by reference in Exhibit 10(s) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1997

(q) Oglebay Norton Company Performance Option Agreement between the Company and John N. Lauer, dated as of December 17, 1997*

Incorporated by reference in Exhibit 10(t) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1997

(r) Oglebay Norton Company Special Supplemental Retirement Plan, dated as of December 17, 1997*

Incorporated by reference in Exhibit 10(u) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1997

* Indicates management contracts or compensatory plans or arrangements in which one or more directors or executive officers of the Company may be participants.

** As appropriate, indicates filing made on behalf of predecessor Registrant's, ON Marine Services Company, a Delaware corporation, before March 8, 1999 known as Oglebay Norton Company.

(s) Form of Oglebay Norton Company Director Fee Deferral Plan, dated as of February 1, 1998*

Incorporated by reference in Exhibit 10(v) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1997

(t) Form of Oglebay Norton Company Pour-Over Trust, dated as of December 17, 1997*

Incorporated by reference in Exhibit 10(w) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1997

(w) Indenture, dated as of February 1, 1999 among Predecessor Registrant, the Guarantors and Norwest Bank Minnesota, National Association

Incorporated by reference in Exhibit 10(w)(1) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1998

(w)(1) Registration Rights Agreement dated as of February 1, 1999, among Predecessor Registrant and The guarantors and CIBC/Oppenheimer Corp.

Incorporated by reference in Exhibit 10(w)(2) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1998

(w)(2) Supplemental Indenture (Assignment and Assumption Agreement), dated March 5, 1999 among Registrant, Predecessor Registrant and Norwest Bank Minnesota, National Association

Incorporated by reference in Exhibit 10(w)(3) in the Registrant's Annual Report on Form 10-K for the year ended December 31, 1998

(w)(3) Supplemental Indenture dated March 5, 1999

Incorporated by reference as Exhibit 4.10 from Form S-4 filed on April 14, 1999

(w)(4) Supplemental Indenture dated April 12, 1999

Incorporated by reference as Exhibit 4.10 from Form S-4 filed on April 14, 1999

21 Subsidiaries of Company

Filed herewith as Exhibit 21

23 Consent of Independent Auditors

Filed herewith as Exhibit 23

27 Financial Data Schedule

Filed herewith as Exhibit 27

* Indicates management contracts or compensatory plans or arrangements in which one or more directors or executive officers of the Company may be participants.

** As appropriate, indicates filing made on behalf of predecessor Registrant's, ON Marine Services Company, a Delaware corporation, before March 8, 1999 known as Oglebay Norton Company.